a

SYLLABUS OF LECTURES

ON

HOME NURSING

GIVEN AT

THE CHICAGO TRAINING SCHOOL FOR HOME AND PUBLIC HEALTH NURSING

JOHN DILL ROBERTSON, M. D.,

COMMISSIONER OF HEALTH

FOURTH EDITION

EDUCATIONAL SERIES A 18c

1920

"Printed in the House
of Severinghaus" 500

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The following members of the Teaching Staff gave the lectures contained in this Syllabus. A number of others, whose names are not included, gave single lectures:

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A knowledge of nursing should be general among the women of Chicago. Without such knowledge no woman is prepared to be a mother.

The death rate for babies in Chicago cannot be reduced to where it should be until every mother knows how to take proper care of the sick children in her own family, and especially does this apply to the prevention of disease and to the care and nursing of those sick with any one of the communicable diseases so common to child life.

It is the belief of the Commissioner of Health that the greatest service which can be rendered to the people of Chicago just now—and a service which will be valuable for years to come—is that of widely disseminating this knowledge to every woman in the city who will avail herself of the opportunity offered in the courses of the Chicago Training School for Home and Public Health Nursing.

On July 21, 1919, Mayor Wm. Hale Thompson issued a proclamation inaugurating this school. Following this proclamation the enrollments began, and a total of 790 women finished the first eight weeks' course. Since then two more classes have finished the course, one of 1362, and another of 750 pupils. A total of 2902 women have satisfactorily completed the eight weeks' prescribed course of instruction offered by the school and have received certificates.

The recent recurrence of the influenza epidemic has demonstrated the expedience of establishing the Chicago Training School for Home and Public Health Nursing. The training of nearly 3000 women in the home care of the sick

served to augment the meagre force of graduate nurses available in the city during the emergency. Over 600 of the women who had completed the course given by the school responded to a call of the Commissioner of Health for nurses to volunteer their services to visit the sick under the direction of the field nurses of the Municipal Tuberculosis Sanitarium and give nursing care in the home whenever this was necessary. In addition 400 of the women completing the course of instruction went out and cared for patients at the bedside. In most instances these were cases for which an urgent appeal for nursing care had been made to the Health Department.

Those not taking on either of the aforesaid classes of service rendered valuable service in the care of the sick in their own families, or in the care of relatives.

It was soon apparent that a text book was essential, in order that the nurse might have a book of instruction for ready reference. There were no books published that were deemed suitable for this eight weeks' course.

Chicago has its own problems and the facts given in Chicago's Training School for Home and Public Health Nursing are in many instances peculiar to our own city.

It was, therefore, decided that the lectures as given in this course should be compiled and published in the form of notes. These notes have been put together very hurriedly and undoubtedly a number of typographical errors are present. However, the essential facts and directions for home nursing are contained herein.

It is contemplated to continue these classes indefinitely and as the weeks go by it is planned that this note book will be revised and augmented until it has developed into a standard text book on home nursing.

JOHN DILL ROBERTSON, M.D.,

Commissioner of Health.

MAYOR'S PROCLAMATION.

To the People of the City of Chicago:

In the last week of September, 1918, the pandemic of influenza and pneumonia which swept around the world reached Chicago. Although the suffering was terrific and the loss of life was great; thanks to the efficiency of the Chicago Department of Health, Chicago's record was the best of the large cities. So severe was this outbreak that it taxed the nurses of this city far beyond their ability to care for the afflicted; thousands of persons being unable to obtain nursing service of any kind.

When influenza, or what was then called la grippe, visited Chicago thirty years ago, it remained an unwelcome visitor for more than three years, recurring each year after the initial outbreak. The Commissioner of Health of Chicago and many other health officers believe that it will perform as it did thirty years ago and be with us again this coming fall and winter. Therefore, it behooves us to be prepared and in order that many of our people will not suffer for want of nurses as they did last fall, a plan has been devised for an eight weeks' training course for the mothers, wives and sisters of Chicago who desire to become proficient in home training. This course will be free. * * *

The school will be located in the building at the corner of Fulton and Ada Streets, formerly occupied by the Loyola University Medical School. A faculty is being selected. The doctors and nurses of the Department of Health will co-operate in training the women of Chicago for this work.

Any woman who does not know the practical things to do in case of sickness, such as taking temperature, pulse, respiration, the keeping of proper record sheet for the physician, and intelligently carrying out his orders should take this course. Instructions will also be given in the proper nursing, feeding and care of the baby.

Application for the course can be made at the offices of the Department of Health, Room 710, City Hall, or at any of the Health Department institutions. The first course of instruction will begin on August 4th.

As we know the lack of nurses during the outbreak of influenza last year cost the people much suffering and the city many lives, I, therefore, urge the mothers, wives and sisters to enroll for the nursing service by joining either the day or evening classes of this institution so that they may be prepared not only to care for influenza patients, but be versed in the general home care and nursing of those sick with any of the communicable diseases.

WM. HALE THOMPSON,
Mayor.

TABLE OF CONTENTS

TABLE OF CONTENTS—Continued

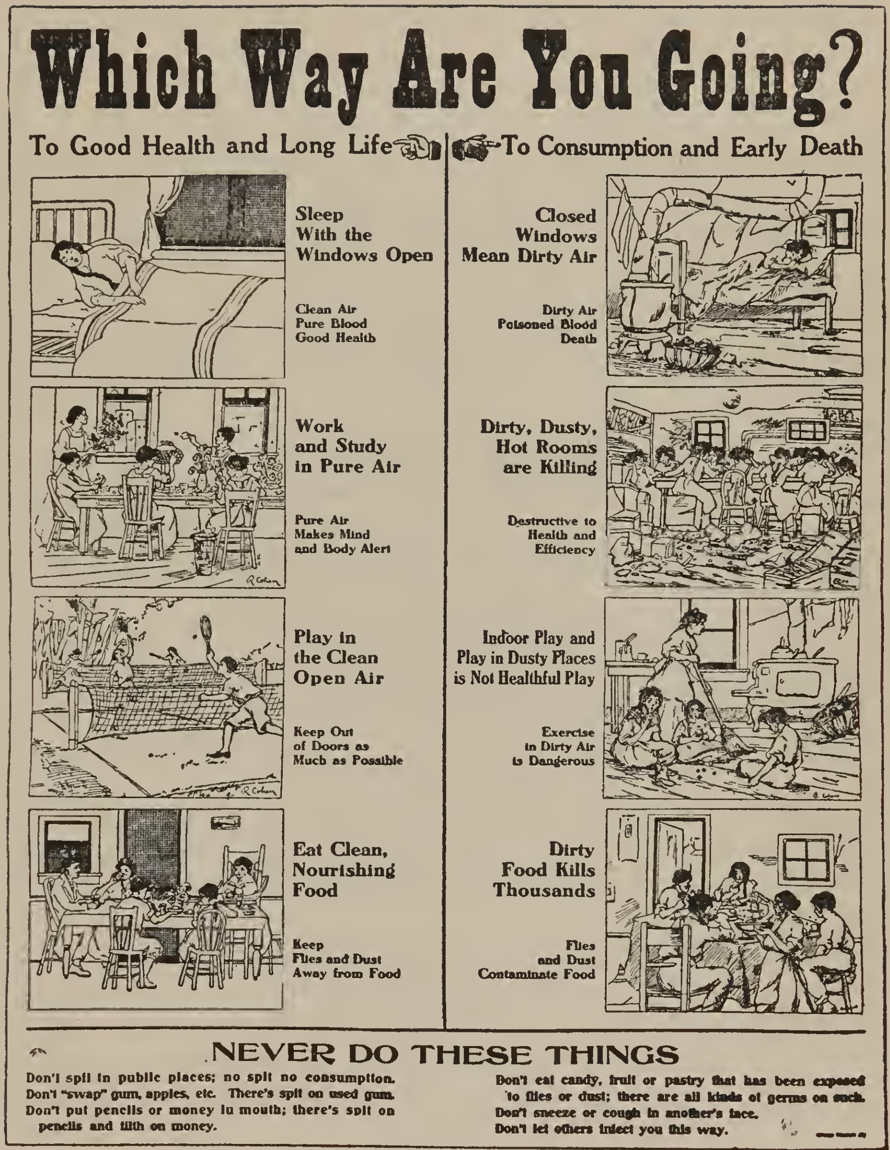

Which Way Are You Going?
To Good Health and Long Life
To Consumption and Early Death
Sleep With the Windows Open
Clean Air Pure Blood Good Health
Closed Windows Mean Dirty Air
Dirty Air Poisoned Blood Death
Work and Study in Pure Air
Pure Air Makes Mind and Body Alert
Dirty, Dusty, Hot Rooms are Killing
Destructive to Health and Efficiency
Play in the Clean Open Air
Keep Out of Doors as Much as Possible
Indoor Play and Play in Dusty Places is Not Healthful Play
Exercise in Dirty Air is Dangerous
Eat Clean, Nourishing Food
Keep Flies and Dust Away from Food
Dirty Food Kills Thousands
Flies and Dust Contaminate Food
NEVER DO THESE THINGS
Don't spit in public places; no spit no consumption.
Don't "swap" gum, apples, etc. There's spit on used gum.
Don't put pencils or money in mouth; there's spit on pencils and filth on money.
Don't eat candy, fruit or pastry that has been exposed to flies or dust; there are all kinds of germs on such.
Don't sneeze or cough in another's face.
Don't let others infect you this way.

FIGURE 1.

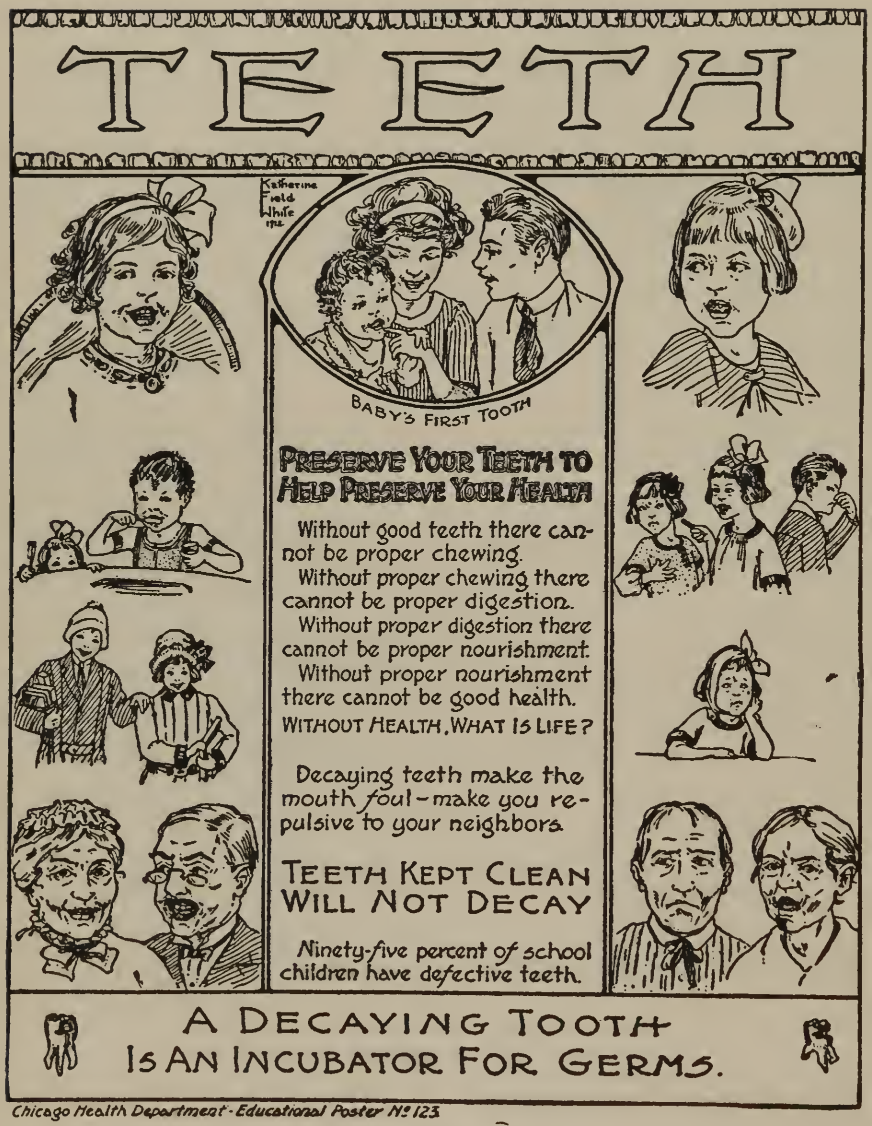

TEETH
Katherine Field White
BABY'S FIRST TOOTH
PRESERVE YOUR TEETH TO HELP PRESERVE YOUR HEALTH
Without good teeth there cannot be proper chewing.
Without proper chewing there cannot be proper digestion.
Without proper digestion there cannot be proper nourishment.
Without proper nourishment there cannot be good health.
WITHOUT HEALTH, WHAT IS LIFE?
Decaying teeth make the mouth foul – make you repulsive to your neighbors.
TEETH KEPT CLEAN WILL NOT DECAY
Ninety-five percent of school children have defective teeth.
A DECAYING TOOTH IS AN INCUBATOR FOR GERMS.
Chicago Health Department - Educational Poster No. 123

FIGURE 2.

LESSON 1.

THE HOME NURSE.

Qualifications.

Duties.

(a) To her patient.

(b) To her doctor.

(c) To herself.

Dress.

Qualifications.

The requisites of a good nurse are good health, common sense, and the power of improvising. Common sense is at all times needful, but in the field of nursing its use may determine the life or death of a patient. A nurse is called to work under varied conditions. One home may be equipped, or there may be money to equip it, with all necessary working material for the nurse. Another home may be lacking in every essential for the sick room. In the latter case, the nurse will have to improvise furnishings for the patient's comfort. The good nurse does not enter the sick room and begin demanding. The very poor family cannot afford to pay for much more than the medicines or food for the patient. Often too, the case is of an emergency character and what must be done, must be done at once, without waiting to secure equipment. In such a case the nurse must apply common sense and her power of improving to her nursing knowledge.

The good nurse must be kind; but firm. She should be sympathetic without being emotional. She should at all times be cheerful, patient, and even tempered, remembering that the possible irritability and fretfulness of a patient is a part of his disease.

Duties to her patient.

The home nurse should do her best for her patient under all circumstances, and should do it cheerfully. She should never worry the patient by any discussion of her own troubles, her lack of sleep, her weariness, or anything of the sort.

She should shield the patient from all domestic or household worries, and should keep away from the patient everything that might in any way worry or disturb him.

One of the nurse's important duties is to shield the patient from visitors that might worry or tire him. Most patients feel that if a person calls to see them, they should see the visitor for fear they will hurt his feelings if they refuse to do so. Some visitors are tiresome when one is in good health, and are a real menace to recovery when one is ill. The nurse should be a barrier to keep such visitors from her patient and should herself assume the unpopularity that is likely to result. If such a visitor is admitted, the nurse may tell him beforehand that calls are limited to five minutes and insist upon his leaving then, even though the patient courteously insists that he is not tired. In some illnesses cheerful visitors have a real therapeutic value. Ordinarily the doctor should say whether or not the

patient may see visitors, and how many he may see, but the nurse should never let the fear of unpopularity prevent her from excluding injurious visitors

Duties to her doctor.

The home nurse should accept and carry out as far as possible the doctor's orders and wishes. This point cannot be too greatly emphasized. If you call in a doctor, follow his directions absolutely. Make written notes of his directions concerning food, medicine, stimulants, etc., in order that there may be no chance of your forgetting any part of his directions. Make written notes also of anything important regarding the patient that may happen between his visits.

Never attempt of your own accord any treatment of any sort without consulting the doctor. Giving an enema has been known to kill a patient, and there are cases where giving so simple a medicine as caster oil at the wrong time may result fatally.

The nurse should always have everything in readiness for the doctor's visit. She should have the patient washed, the bed made, and the room cleaned.

Duties to herself.

The nurse must try to keep up her general health, and must keep herself in good mental condition.

The nurse's health should be maintained:

1. By taking sufficient plain, good food regularly.

2. By having sufficient sleep and rest, so far as is possible. The nurse should have six or eight hours

sleep out of each twenty-four hours.

3. By getting into the fresh air daily, even if only for a short time. The nurse should not allow herself to feel that she must be in the patient's room all of the twenty-four hours. She will be much more valuable during the hours that she is on duty if she gets her own rest and some recreation. She should, however, always be sure to leave someone in charge of the sickroom while she is away from it, and she should never fail to leave definite directions with her substitute about medicines, etc.

4. By wearing proper clothing.

The nurse must keep herself clean and neat. Care of the teeth, hair, nails, person and dress are all of the utmost importance. There should be no personal odor. A sick person is usually more susceptible to odors than a well person. (The odor of perspiration that persists with some people in spite of bathing, may usually be removed by bathing under the arms with a solution of baking soda and water).

Dress.

The most important article of dress so far as the nurse is concerned, are comfortable shoes. Good feet are absolute essentials to the nurse, and she cannot keep good feet without proper shoes.

Proper shoes are comfortable shoes. Neither excessively high heels nor excessively low heels should be tolerated. Either may cause diseases of the arch of the foot. Either may cause so-called rheumatism. In addition to the heel of the shoe, one should observe carefully the thickness of

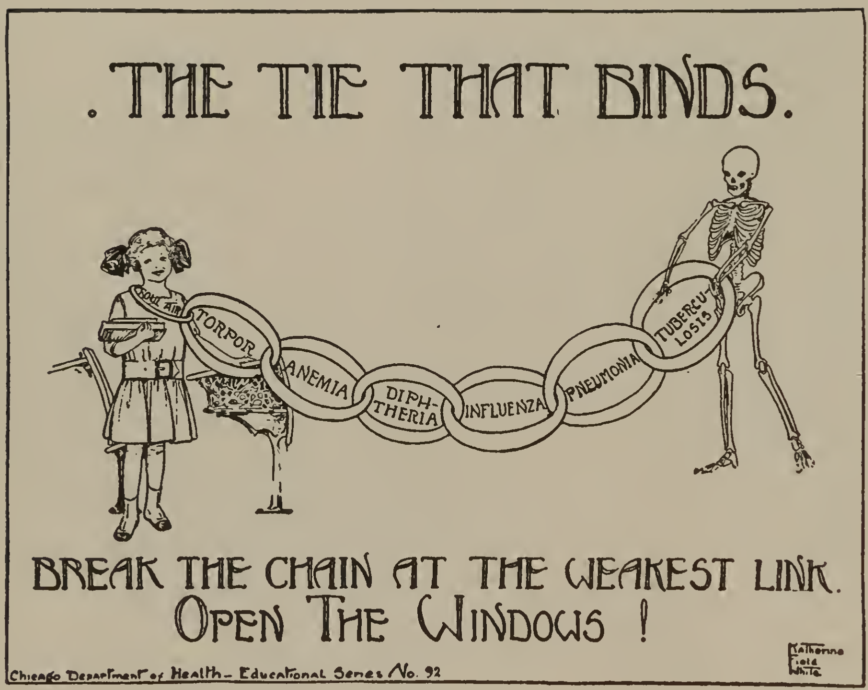
the sole of the shoe. Callous spots on the sole of the foot, corns and bunions are all avoidable. They are all directly due to incorrect shoes.

The nurse's dress should be comfortable, loose enough to make lifting the patient easy, and of washable material, so it may always be clean and fresh, and easily disinfected if necessary.

Better keep on being a Fresh Air Fiend---Even if it is cold.

(Reproduced through courtesy of *Chicago Record Herald*)

FIGURE 3.



. THE TIE THAT BINDS.
FOUL AIR
TORPOR
ANEMIA
DIPH-THERIA
INFLUENZA
PNEUMONIA
TUBERCU-LOSIS
BREAK THE CHAIN AT THE WEAKEST LINK.
OPEN THE WINDOWS !
Katherine Field White
Chicago Department of Health – Educational Series No. 92

FIGURE 4.

LESSON 2.

THE SICK ROOM.

Choice of the Sick Room.

Furnishings of the Sick Room.

Ventilation of the Sick Room.

Temperature of the Sick Room.

Care of the Sick Room.

Choice of the Sick Room.

The choice of the sick room will depend largely upon the nature of the patient's illness. The two important things to consider are the good of the patient, and the convenience of the nurse.

The patient in a dark, poorly ventilated room has a harder battle to fight than the patient in a properly selected room. Sunshine and fresh air are nature's best remedies. The Italians have a proverb that says, "Where the sun never enters, the doctor will."

The model sick room is a light, quiet, airy, easily heated room on the south or east side of the house, convenient to the bathroom. Bearing the model sick room in mind, the nurse should make the best of what she finds in the house.

If the patient is an elderly person or is a chronic invalid, and the nurse is also the housekeeper, the sick room should be as near as possible to the room in which the nurse must do her daily work, — that is, it should be near the kitchen.

In such a case, the selection of a room that is satisfactory according to medical standards may work injury both to the patient and to the nurse. For example, suppose the patient to be in a model room on the third floor, removed from the noises of the house, etc., with the nurse compelled to do the household work for her family. Either the nurse will wear herself out climbing stairs, or the patient will suffer neglect. To step from one room to the next to give a drink of water, or to give the bedpan, is no great tax on either the time or energy of the nurse. To go up two flights of stairs for the same purpose is quite a different matter.

If the patient is a child with the measles, chickenpox, or any other contagious disease, the sick room should be the room in the house that is most easily isolated, in order to keep the disease from spreading to the other members of the family.

In such cases one member of the family must act as nurse, without any household duties, regardless of the hardship to the rest of the family. And in Chicago, in order that the patient may be properly quarantined in the home, the Health Department requires that the bathroom used for the patient suffering from a contagious disease must not be used by any other member of the family. It is always desirable that the sick room be conveniently near the bathroom, or where water is handy. The nurse uses water frequently about her patient – giving baths, giving medicines, cleaning articles used by the patient, for hot water bags, for cold compresses,

for drinking purposes, etc. Then the nurse, especially in caring for a case of contagious disease, should thoroughly wash her hands every time she touches the patient.

It can readily be seen that the selection of a sick room is more a question of common sense than of fixed medical rules.

Furnishings of the Sick Room.

The furnishings of the sick room, like the choice of the sick room, will depend largely upon the nature of the patient's illness. The important things to consider here are cleanliness and simplicity.

In the case of an elderly person or of a chronic invalid it is desirable that the room should look homelike to the patient. In the case of contagius diseases, it is desirable that there should be as little furniture as possible to disinfect or burn after the illness, consequently in such cases the room should be stripped of everything except bed, chair and bedside table. In any case of illness it is desirable that there should be as few things as possible in the room to catch dust, because dust is one of the great enemies to the recovery of the patient.

Dust under the microscope resolves itself into particles of soot, sand, iron and steel, glass, lime, woody fibres of vegetables, dried sputum, shreds of linen and wool from soiled bedding, pieces of hair, dried particles of pus, blood and human tissue, dried animal waste and fragments of food. Many of these may bear disease germs.

This is the material that mingles itself with the

food that is eaten, and that if not properly and frequently removed is inhaled into the lungs of both the patient and the nurse. Naturally, the fewer objects in the room to catch and hold dust the better for both patient and nurse.

The essential furnishings of the sick room are a bed, a chair and a bedside table. Whatever other furniture is in the room should be selected with some definite purpose in mind. Thus, if curtains are hung at the windows it should be because curtains will tend towards the patient's recovery, or peace of mind, by making the place seem homelike.

The Bed should be a single, iron bed, 26 inches high. Where such a bed is not at hand the nurse must make the best of what she finds. The bedstead should be wiped with a moist cloth every day or two, to keep it free from dust.

If the bed is too low the castors may be removed and the bed raised to the proper height by means of wooden blocks or of bricks. If the bed is a double bed with sagging spring, the hollow in the center may be supported by using boards the width of the bed, placed upon the springs and under the mattress.

It is desirable that the bed should stand well away from the wall on all sides in order that the nurse may conveniently attend to the patient. But, if the nurse finds a double bed in a room so small that the bed cannot be pulled away from the wall, the nurse must let the bed stay where it is and suffer extra inconvenience herself.

The patient should never face the light. When it

is possible the nurse will arrange the bed so the patient will be facing away from the light, but where this cannot be done the nurse will turn the patient around if necessary, placing his head at the foot of the bed. Here, as everywhere else in nursing, common sense should be used. At night the light should never shine into the patient's eyes, nor should it be glaringly bright.

The Bedding should consist of a mattress, three common sheets, a rubber sheet, a light-weight spread, small feather or hair pillows and two single, mixed wool and cotton blankets. Two light blankets are warmer than a single heavy one.

The best mattress is one of felt or of horse hair. Any sort of mattress may be used, however, if it is clean, is firm, and is free from lumps and hollows. Where the only mattress available is a lumpy one, the nurse will make the surface as smooth as possible by careful padding. The mattress should be turned frequently in order to prevent a depression in it where the patient lies. It should be turned from head to foot, not from side to side, and be brushed frequently with a stiff brush, especially around the tufts.

Two sheets, the upper and the lower sheets, should be long enough to fold well under each end of the mattress, and should be wide enough to fold in well at the sides of the mattress in order to prevent wrinkles in the sheets, because wrinkles may cause bed-sores. The third sheet, or draw sheet, may be an ordinary cotton sheet placed crosswise on the bed, or it may be a double sheet folded and

placed crosswise with the crease toward the top of the bed. The rubber sheet should be 3/4 to 1 yard wide, and should reach from the pillow to the knees of the patient and be long enough to tuck well under both sides of the mattress. It is necessary only in cases where the mattress needs protection. When no rubber sheeting is available the mattress may be protected by a piece of oilcloth or by newspapers.

When the rubber sheeting needs cleaning lay it flat on the floor and wash it carefully with a soft brush, or with a cloth and warm soapsuds. It should be washed on both sides and then dried, handling it carefully, for it is easily torn, and a small hole anywhere near the center of the sheet will make it useless.

When a mattress becomes badly soiled it should be sent to the cleaner to be made over. A badly soiled mattress cannot be made fit for use by home methods of cleaning. If the mattress has been soiled by discharges from a patient suffering from a contagious disease it should be burned. Slight blood-stains may be removed from a mattress or from woolen blankets by covering the fresh stain with a paste made from laundry starch and water. Allow the paste to dry, then brush the mattress or blanket. If the stain is not fully removed by the first application, try a second and a third.

It is well to have a number of small pillows, as they are most useful for propping the patient up in bed, for supporting the back, for supporting an aching limb, etc. Hair pillows are firmer and cooler than feather or down pillows and are especially serviceable in cases of fever. All

pillows should be clean. They should be frequently exposed to the air and sunshine.

The Chair used in the room should be a simple, plain, straight-backed chair. Upholstered chairs catch too much dust to be allowed in the sick room, and rocking chairs are likely to irritate a nervous patient.

The Bedside Table should be a small, plain table. If a polished table is used it should have oilcloth under the plain, white table cover to protect it in case of accident. It should be used only for such things as the nurse wishes to leave at the patient's bedside, usually a glass of water, and a vase of flowers, and as a rest for the tray.

Ventilation of the Sick Room.

A current of fresh air should be circulating in the sick room day and night. The blood is purified by means of the oxygen in the lungs. Fully one-third of the whole volume of blood is always circulating in the lungs and each corpuscle passes through them eight thousand times in twenty-four hours. If a fresh supply of oxygen is not admitted to the room at frequent intervals, the patient is forced to rebreathe impure air.

The necessary current of fresh air must be secured without subjecting the patient to draughts. How it will be secured depends entirely upon the nature of the sick room.

Where there are windows on opposite sides of the room, good ventilation may be secured by opening one window from the top and the other from the bottom. Where there is

but one window in the room the upper sash may be lowered and the lower sash raised; or a window pane may be removed, and the space covered with muslin or cheese-cloth, but in such cases the door will have to be opened often in order to really flush out the air of the room. Where double windows are used in cold weather such windows should have a sliding pane or should be put on hinges.

Where there is danger that the patient will be in a draught from open windows the bed should be protected by a screen, or a board should be fitted across the lower opening of the window. The fresh air will enter at the middle of the window between the two sashes. The same device may be made by lowering the upper sash and fitting the board at the top of the window.

In some cases it may be necessary to ventilate the room entirely from an adjoining room. Where there is any doubt in the nurse's mind as to the proper means of ventilating a room she should ask the doctor about it.

Temperature of the Sick Room.

The nurse must not try to keep the sick room warm by keeping doors and windows closed. Artificial heat must be provided in sufficient quantity to make it possible to have the windows open a little in even the coldest weather. The temperature of the room should be 65° to 68° F. during the day, and about 65° F. at night. A room should never be heated by oil heaters or gas heaters, except in emergencies.

In such diseases as pneumonia, it may be advisable to open all the windows in the room and use screens about

the bed to avoid draughts on the patient, supplying the patient with the necessary additional covering. In all such cases the nurse will be under the direct charge of the attending physician, who will give full directions for treating the case.

Care of the Sick Room.

The sick room must be kept perfectly clean. Soiled clothing or slops should never be allowed to remain in the room. Flies should be kept out. They annoy the patient by crawling over him, and they are likely to carry disease germs from the sick room to the rest of the house. All dust that may have settled on the floors or furniture must be removed daily.

The model sick room has a bare floor with no rugs, except possibly a couple of small washable rugs. In cleaning such a floor use a damp cloth or an oil mop, and take the rugs out of the room to shake them. Where the room has a carpet on the floor, a carpet sweeper or vacuum sweeper should be used; but if it is necessary to use a broom, because nothing else is at hand, sprinkle the carpet with wet tea leaves, moistened salt, or a newspaper torn into small bits and soaked in lukewarm water. These moistened particles gather the dust and help to keep it from floating about the room. It is also well in sweeping to tie a damp cloth over the broom. The cloth should be redampened as the sweeping proceeds. All dusting should be done with either a dampened or an oiled cloth, preferably a square of cheese-cloth.

In communicable diseases the urine, feces and vomited matter

should be disinfected with chloride of lime, six ounces, or twelve tablespoonfuls, to one gallon of water.

In communicable diseases all soiled linen from the sick room should be placed in a wash boiler or metal can full of water. It should never be taken to the laundry in a dry condition. It should be boiled for twenty minutes after the water begins to bubble. The patient's dishes and silver should be kept in the room, and before returning them to the house they, also should be boiled.

The room should be kept quiet. The reasons are obvious. The patient should have rest of body and mind. The act of keeping him happy or contented will aid in recovery. Usually the room should be as far as possible from those in which the family congregate—the family talking will often disturb a sick person—and under no consideration may family worries be discussed either with or in the presence of a patient. Neighbors and friends should be requested not to run into a patient's room, as this has a disturbing effect.

The sick room should, for the time being, belong entirely to the patient. It should not be shared with other members of the family, nor should other members of the family keep any of their clothes or possessions in it.

LESSON 3.

BED MAKING.

MAKING AN UNOCCUPIED BED—

(a) The Medical Bed.

(b) The Surgical Bed.

(c) The Maternity Bed.

(d) The Fracture Bed.

CHANGING THE BED WHEN OCCUPIED—

(a) To make a bed with a patient in it without changing the sheets.

(b) Changing the lower sheets.

(c) Changing the upper sheet and blanket.

(d) Turning the mattress with patient in bed.

(e) Changing the patient's pillows.

Making the Medical Bed.

Cover the mattress with a sheet tucked in firmly all around, beginning at the head, and squaring the corners. If the mattress needs protection, stretch a rubber sheet over this lower sheet and tuck it in firmly at the sides. The rubber sheet should reach from the patient's shoulders to his knees. Rubber sheets should not be bought until they are needed as rubber goods do not keep well, and a rubber sheet with a hole in it is of no value.

Next place the draw sheet across the center of the bed over the lower sheet, or over the lower sheet and rubber sheet. Tuck both ends of the draw sheet firmly under the sides of the mattress.

Lay the upper sheet on the bed with the wide hem just

reaching the top of the mattress and tuck it in at the bottom of the mattress, sufficiently to make the sheet lie smooth and straight. Square the corners and tuck the sides of the sheet under the sides of the mattress.

Adjust the blankets one at a time so they will come just as far as the patient's chest, tuck them in at the foot of the bed, square the corners, and tuck in the sides. Next put on the spread so the top comes even with the top of the blanket. Tuck it in at the foot of the bed, square the lower corners, and allow the sides to hang over the sides of the bed. Turn the upper sheet neatly back over the blanket and spread; shake up the pillows; place the pillows at the head of the bed, one flat on the bed, and the other standing on it at right angles to it.

Making the Surgical Bed.

Make the surgical bed just the same as the medical bed, except that you will not tuck in the upper sheet and blankets at the sides, and you will not adjust the pillows in the same way. After the bed is made, fold the top covers down to the foot of the bed; lay a small rubber sheet covered with a towel over the head of the mattress and tuck it in at the sides. This is to protect the bed in case of vomiting. Stand the pillow against the head of the bed and fasten it there, so the patient cannot knock his head against the head of the bed.

Place hot bricks or irons or hot water bottles at the center and at the foot of the bed, in order to heat the bed thoroughly before the patient is placed in it. Lay a clean nightgown and two separately folded blankets over the hot bricks or irons.

When the patient is ready to be put into the bed, remove the

Removing the Top Sheet Without Exposing the Patient.

FIGURE 5.

Changing or Turning the Mattress With Patient in Bed.

FIGURE 6.

Ready to Begin the Bath.

FIGURE 7.

The Bath.

FIGURE 8.

hot water bottles, bricks, or irons, and the heated gown and blankets quickly. Lift the patient into the bed and place the warm blankets over him, folding one blanket over the patient's chest and abdomen. Tuck the ends of this blanket under the sides of the mattress. Lift the patient's feet and legs, place the other blanket under them and wrap them up in it snugly. This will prevent the patient from becoming chilled, and will also prevent him from tossing about while coming out from under the influence of the anesthetic.

Now draw the bed clothes from the foot of the bed and cover the patient with them. Place a towel over the upper edge of the covers in case of possible vomiting.

Making the Maternity Bed.

Take three boards about a foot wide and place them in the middle of the bed between the mattress and the springs. Put the mattress into place, cover it with a rubber sheet, and finish making the bed just as you would the medical bed. (The subject of the maternity bed will be considered more fully in the chapter on Obstetrics.)

Making the Fracture Bed.

Make the fracture bed just the same as you make the medical bed, except that you will place boards one or two inches apart from each other, over the springs and under the mattress, the full length of the bed. These boards make the bed perfectly firm and prevent the least motion of the fractured members from such causes as sinking of the mattress.

To Make a Bed With a Patient In It Without Changing the Sheets.

First free the bedclothes at the top, bottom, and sides. Straighten the patient's nightgown and smooth out all wrinkles in

the lower sheet. Draw out each piece of covering separately, then tuck it in tightly at the sides. Shake the pillows, turn them and replace them. This should be done at least morning and evening if the patient is obliged to be in bed the entire day.

Changing the Lower Sheets.

Have everything at hand before beginning. Assist the patient to the edge of the bed opposite to the side which is to be changed first. In moving the patient be sure to support the part of the body which needs it most. If the patient is to be brought to the left side, go to the left side of the bed; stoop, and slip the right hand under the patient's right shoulder, and the left hand under the right hip. Slowly turn him toward you, being careful that the support is given with the whole hand and not the fingers alone.

Then go to the opposite side and roll up the lower sheet, the draw sheet, and the rubber sheet against the patient's back. Lay the clean lower sheet over the right half of the mattress, tucking it in at the head, sides and foot; adjust the right half of the clean draw sheet and roll the remaining half of the clean sheet and of the clean draw sheet against the patient's back. Next move the patient gently to the freshly made right side of the bed, remove the soiled bedding and tuck the left half of the clean sheet and the draw sheet into place.

Changing the Upper Sheet and Blanket.

To change the upper sheet and blanket requires quickness to avoid exposure. Free the bedclothes from the foot and side, turn the blankets back, leaving only the soiled upper sheet over the patient. Spread the clean sheet over this, tucking it in firmly at

the bottom, and slip the hand down under the clean sheet and draw the soiled one out. Spread the blankets, draw them up smoothly toward the patient's neck and turn the clean upper sheet back over them.

Turning the Mattress With Patient In Bed.

Move the patient to one side of the mattress, loosen the bedclothes, and roll them up tight against him.

Take hold of the mattress from the side opposite the patient and draw it half way across the bed. Place three pillows on the exposed half of the springs and move the patient with the bedclothes under him, onto the pillows. Turn the mattress from the top to bottom, make it up with fresh sheets and draw sheet, and move the patient back onto it. Remove the three pillows and draw the mattress back into position.

Changing the Patient's Pillows.

Lay the fresh pillow on the left side of the bed. Stand at the right side of the bed, slip the left arm gently under the patient's shoulders, raise him slightly and draw the pillow from under his head with the right hand. Reach over and draw the fresh pillow into place and lower the patient's head.

LESSON 4.

DAILY ROUTINE CARE OF THE PATIENT.

1. The daily routine.
2. Humoring the patient.
3. To prop a patient up in bed.
4. Difficult breathing.
5. Changing position and rearranging bed.
6. Comfort of numerous small pillows.
7. Getting a patient up in a chair.
8. Prevention of bed-sores.
9. Restraining a delirious patient.
10. Care of bedpan.

Daily Routine.

In every home where there is sickness there should be a daily routine. Important duties should be performed at stated times during the day. The nurse should follow a natural course in deciding on the order of her routine duties.

When the patient wakens in the morning the nurse should take his temperature, pulse, and respiration. Give him the urinal or the bedpan. She should bathe the patient's hands and face with lukewarm water; comb the patient's hair; wash out the patient's mouth with water or a solution. (A simple mouth-wash is a teaspoonful of salt in a glass of water.)

The bed should then be rearranged as described in the directions for making the bed, without changing the sheets. The patient should be placed in a comfortable posi-

tion and should be given his breakfast at once. It is a grave mistake to keep a patient waiting for his breakfast any longer than is absolutely necessary. After breakfast the patient should be allowed to rest quietly for an hour and then should be given a cleansing bath or an alcohol rub.

Humoring the Patient.

Always make the patient as comfortable as possible, humoring him when it makes no difference. If, however, it is necessary to be firm, never allow fretting or pleading to change what is known to be the right course for his good. Leave the patient alone at intervals during the day for complete rest.

One great factor to be considered in humoring a patient is the age of the patient. Children are so quickly and so easily spoiled that they should be humored as little as possible during their illnesses. Some grown persons have been known to find illness so attractive on account of humoring that they were not anxious to get well again. Where old persons are concerned, however, there is little danger in humoring them even beyond the extent that is good for them. Their habits are formed and they would rather be allowed to do as they wish and to have what they want than to live a few weeks longer.

To Prop a Patient Up In Bed.

To prop a patient up in bed at least five pillows will be necessary if there is no back-rest. See that the pillows come well down to the base of the spine, that the support is even and that the head is not thrown forward on

the chest nor allowed to tilt too far backwards. An inverted chair may be placed on the bed and the pillows arranged against the back of the chair to make an improvised back-rest. A board with the ends placed on a box or on a pile of magazines will make a table for use when the patient is propped up.

Difficult Breathing.

Difficult breathing is often found associated with pneumonia, croup, asthma, and heart disease. Patients suffering from difficult breathing usually have to be propped up. If the sickness is likely to be prolonged, provide a wide board about two feet long for this propping up. Support the board by an inverted chair, and pad it well with pillows.

Changing Position and Rearranging the Bed.

In lifting a patient always support the parts of the body which are in special need of support. Turn the pillows and shake them, and, if the patient is restless, rub the back and limbs gently, putting a pillow beneath the knees, or at the back.

If the patient has to lie constantly on his back the nurse might occasionally support the back for a few minutes with her two hands, one hand slipped under the shoulders and the other placed against the small of the back. This may prove restful.

It often rests a patient to bathe the face and hands, or to straighten out the sheets, shake them, and tuck them in anew.

The Comfort of Numerous Small Pillows.

Numerous small pillows are useful in helping to keep

a patient comfortable. They may be made of old soft materials, or of excelsior or hair, and covered with old linen or cheese-cloth. These pillows may be used wherever the patient's comfort calls for them. They may be fitted into the hollow of the back, under the shoulders, under a tired arm or leg, or placed where they will remove the weight of the bedding from any sensitive spot.

Getting a Patient Up in a Chair.

After a serious illness the patient should never be allowed to sit up until the doctor says that he may do so. Then have a chair, pillows, and the patient's clothes all in order before attempting to get a patient up. When everything is in order slip on the patient's stockings and slippers and, if the weather is cold, put on underwear also. Next slip a warm bathrobe over the patient's gown. Then lift the patient from the bed into the chair, which should have a high back and arms and should be well padded with pillows. If the patient must be lifted bodily from the bed the nurse should have someone to help her do it. The helper should place one arm under the patient's neck and his other arm under his hips, while the nurse should place one arm under the patient's head and the other arm under his shoulders. The patient should lie quiet and relaxed while being moved, for if he tries to help it will be harder to move him.

If the nurse must get the patient up alone she should first raise him to a sitting position in the bed, having him support himself, if necessary, by holding tightly around her neck. Move the patient's feet and legs to the

edge of the bed, then ease the feet to the floor. Be sure the chair is in exactly the position where you want it. Grasp the patient under the arms, raise him to a standing position in front of the chair, and ease him gently down into the chair. Wrap a blanket snugly around the patient, pin it around the feet with safety pins and slip a stool under the feet.

The patient should not sit up longer than fifteen minutes or a half hour after a serious illness.

Prevention of Bed-Sores.

Bed-sores are due to faulty nursing. They are caused by continuous pressure on certain spots, by friction between two surfaces, by moisture, by wrinkles or creases in the under sheet, by lack of cleanliness. To prevent bed-sores is much easier than to cure them.

Turn the patient every hour or so. Keep the patient dry and clean, and the bed free from wrinkles, crumbs, or lumps. Relieve, when possible, the pressure on parts where bed-sores are most likely to occur, i. e., base of spine, elbows, ankles, hips, shoulders, or between the knees. To relieve the pressure circular cushions or air cushions are used. A home-made circular cushion may be made of a small roll of cotton batting made into a circle and covered with a roller bandage. The spot where a bed-sore is threatened is placed over the hole in the bandage.

The first sign of a bed-sore is redness, which does not disappear when all pressure is removed, or a dark discoloration of the skin. Such redness or discoloration should

be reported to the physician as soon as the nurse notices it, and the directions that the physician then gives should be followed by the nurse most carefully.

Restraining a Delirious Patient.

A patient who shows the least sign of delirium should never be left alone, even for a moment. When it is necessary for the nurse to leave the room someone else must take her place until she returns.

If a patient becomes definitely delirious the doctor should be notified and the patient should be kept as quiet as possible until the doctor comes. Do not contradict him unnecessarily; agree with him; do everything possible to keep him quiet without the use of forcible restraint. Forcible restraint will only excite the patient still more and cause more violent resistance on his part. In some conditions such violent resistance would cause the patient's death.

Care of Bedpan.

In cold weather the bedpan should always be warmed before bringing it to the patient. Raise the patient gently by slipping the left hand under his hips, then place the bedpan under him with the right hand. Never leave the patient on the bedpan a minute longer than necessary. Before removing the pan cleanse the patient with toilet paper and, if necessary, sponge him off with warm water, being careful that he is thoroughly dried. Cover the bedpan with a wet cloth and take it from the room immediately to empty and clean it, first by washing

it with cold water, then with hot water. In cases of contagious diseases, such as typhoid fever, the germs of contagion are found in the stool and in the urine, hence it is necessary to disinfect these before emptying the bedpan, and some of the disinfecting solution should be left standing in the clean bedpan. Chloride of lime is the disinfectant usually used for this purpose.

A bedpan that is not clean, warm and properly adjusted under the patient may be a great factor in producing a bed-sore. The nurse must see that the pan is introduced in such a manner that the skin is not rubbed hard or scratched, that a part of the nightgown is not folded in between the bedpan and the body, and that when removed the patient is lifted entirely free from it before it is pulled upon; also that the patient's buttocks are thoroughly dried and powdered.


There are 60,000 blind persons in the United States.
At least 20,000 of these sad cases
were Preventable!
IF CHICAGO
WILL ENFORCE
THE USE OF
- THIS -
SILVER NITRATE SOLUTION
"THE DROPS"
THE
MEDICINE
DROPPER
IT WILL COST
- THIS -
FIVE CENTS
AND
PREVENT
- THIS -
To Lose one's SIGHT is Like Losing LIFE itself.
SAVE YOUR BABY'S SIGHT
Chicago Department of Health - Educational Series No. 91

FIGURE 9.

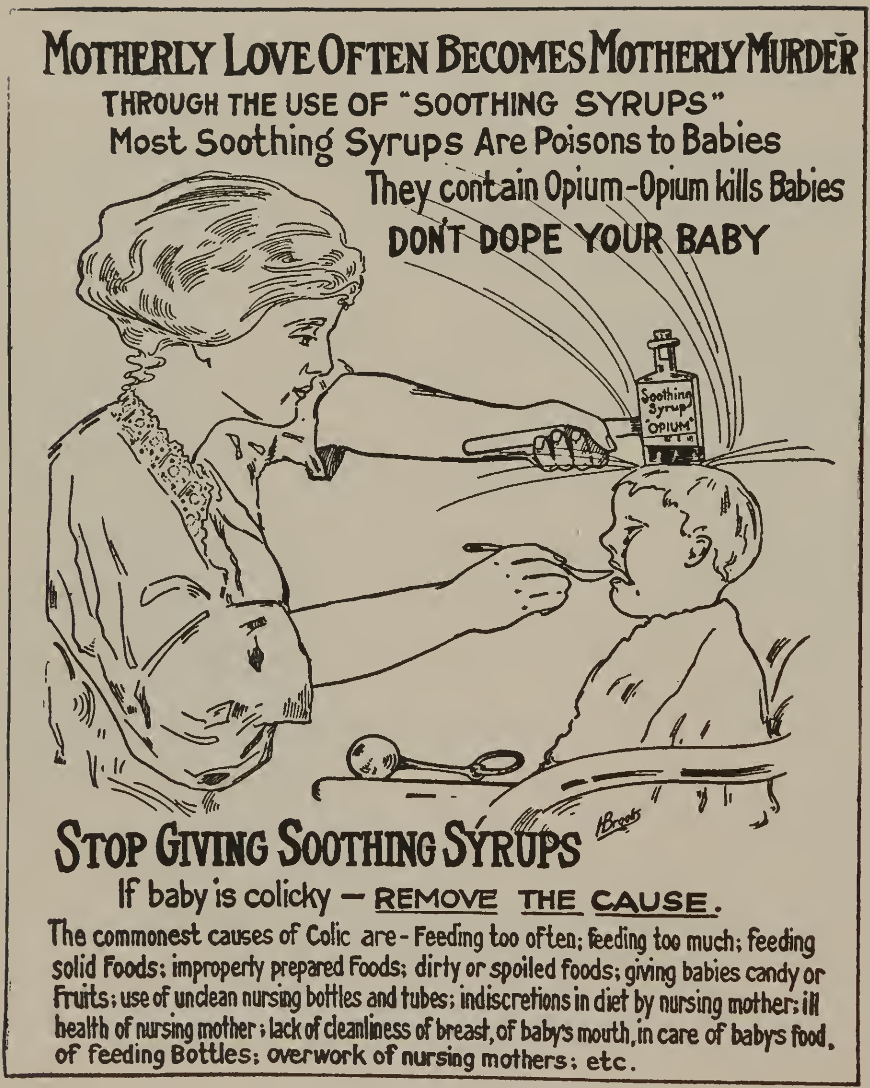

MOTHERLY LOVE OFTEN BECOMES MOTHERLY MURDER
THROUGH THE USE OF "SOOTHING SYRUPS"
Most Soothing Syrups Are Poisons to Babies
They contain Opium-Opium kills Babies
DON'T DOPE YOUR BABY
Soothing Syrup "OPIUM"
STOP GIVING SOOTHING SYRUPS
If baby is colicky — REMOVE THE CAUSE.
The commonest causes of Colic are - Feeding too often; feeding too much; feeding solid Foods; improperly prepared Foods; dirty or spoiled foods; giving babies candy or Fruits; use of unclean nursing bottles and tubes; indiscretions in diet by nursing mother; ill health of nursing mother; lack of cleanliness of breast, of baby's mouth, in care of babys food, of feeding Bottles; overwork of nursing mothers; etc.

FIGURE 10.

LESSON 5.

GIVING MEDICINES AND HOME MEDICINE EQUIPMENT.

Always be careful in regard to medicines. They enter the blood quickly, especially if the stomach is empty.

The following rules should always be borne in mind by the nurse when giving medicine:

1. Do not give medicine unless the doctor prescribes it, and then give only what the doctor has prescribed.

This rule applies particularly to the use of headache powders, and sleep-producing medicines. Most headache powders contain substances that are powerful depressants. Most of the pain-relieving drugs are in reality violent poisons to the nervous system.

The two drugs most commonly used in headache powders are opium in some of its many forms, and the coal-tar drugs. The use of opium, morphin, laudanum, codein, heroin, paregoric, which are merely forms of the same drug, frequently ends in the drug habit. This habit has proved so injurious that there is now a national law preventing the sale of these drugs except under a registered doctor's prescription.

Most people know that opium is an injurious drug, but many people have been led to think that the coal-tar preparations are harmless. Many doctors thought so, as a matter of fact, until recently. These drugs, of which the most common are aspirin, acentanalid, antikamnia, phenacetin, etc., are all powerful depressants and have been known to cause sudden death.

The only cure for headaches is to cure their cause. A cold compress over the forehead or on the back of the neck may relieve them. Usually a person suffering from headache needs a dose of castor oil more than any other medicine.

The chief danger in the use of sleep-producing medicines is that the drug habit will be formed.

Under no circumstances should medicine that is prescribed for one person be taken by another person without consulting the doctor. The mere fact that two persons have grippe does not mean that the medicine the doctor has left for one will be good for the other. When a doctor prescribes medicine he takes into consideration such things as the patient's age, weight, sex, the condition of his heart, the condition of his kidneys, the condition of his bowels, etc., quite as much as the nature of his disease. It is therefore possible that medicine given to one person with grippe or with quinsy or with any other disease might be poison to the system of another person with the same disease.

The chief reason for taking medicine that the doctor has prescribed for someone else is to save the doctor's fee. This is very short-sighted economy of any sort commonly known as "Penny wise and pound foolish.''

2. Always give medicine exactly at the time and in the quantity prescribed by the doctor. Usually he writes full directions for the nurse about medicine and general treatment, and signs these directions. This is especially true in critical cases. If the doctor should forget to leave such directions the nurse should ask for them.

3. Never give medicine in a dim light. This rule is important because many a person has been killed by the wrong medicine.

4. Read the doctor's directions carefully before removing the cork from the bottle.

5. Always read the label twice before pouring out the dose, and again before giving.

6. Shake the bottle before measuring the dose.

7. Measure exactly; with some drugs even a drop too much or too little will alter the effect on the patient. If possible use the regular graduated glass and dropper, as spoons vary in size.

8. Always pour from the side of the bottle opposite the label (this is so the label will not become discolored and unreadable), and never give a medicine that is not labeled.

9. Cork the bottle carefully after the dose is measured.

10. Never allow the moist end of the cork to touch anything.

11. It is usual to dilute medicine with water. The nurse should use judgment as to the amount. There should be enough water to reduce the strength of very strong medicine, but not enough to make too large a dose for the patient to swallow.

12. The disagreeable taste of oils may be lessened by giving them in orange or lemon juice. Some oils, such as castor oil, are repulsive to many people. There is no other medicine, however, that can really take the place of castor oil, consequently the patient should make a decided attempt

to take it. If the nose is held shut while the dose is being swallowed, it will not be tasted. The teeth should be brushed immediately after the dose is swallowed, and the mouth should be well rinsed with a mouth-wash that has a decided taste of its own, or with warm water into which a few drops of essence of peppermint have been poured.

13. Give medicines containing iron through a glass tube. This is necessary because iron is very destructive to the enamel of the teeth.

14. Keep all medicines containing poison separate from other medicines and completely out of reach of children.

15. The nurse should not handle pills and capsules with her fingers, but should bring them to the patient on a spoon. She should place the pill or tablet far back on the patient's tongue and give him a drink of water to aid him to swallow it. Where the patient finds it especially difficult to swallow pills or capsules they should be placed in a bit of bread, in a spoonful of jelly, in a spoonful of berries, or in something of the sort. Do not give pills that are old and stale, for pills often become so hardened with age that they are not dissolved in the patient's stomach, and pass out of the body without any effect. It is a great mistake to get into the habit of taking laxative pills frequently for constipation. The final effect is always to make the constipation more stubborn. The sufferer finds he must increase the number of pills taken as a dose, and finally must try a new sort of pills. The remedies for constipation are exercise and proper diet. If

it does not yield to these measures, a doctor should be consulted.

16. Always give powders direct from their paper wrappings. Crease the paper and shift all the powder to one end of the crease. Have the patient put out his tongue, pour the powder well back on the tongue, then give the patient a drink of cold water.

When giving a drink of water always give it quite hot or quite cold, as lukewarm water is nauseating.

17. Never give the patient stale medicine. The medicine cupboard should be gone over at least once a year and all medicine a year old thrown away, for most medicines lose their strength in that time.

18. Keep all tinctures such as Sweet Spirits of Niter in a dark place, as they lose their strength very quickly if exposed to the light.

19. When giving medicine to produce sleep, see that the patient is comfortably arranged for the night, then give the medicine, and follow it with a hot drink, – hot milk, hot beef-tea, hot cocoa, or whatever the doctor may prescribe.

20. Some drugs have a cumulative effect, especially in old age, in cases where the patient is constipated, and in certain diseases of the kidneys. Digitalis is one of these drugs. When it is being given in such a case, the nurse should be especially watchful for evidences of accumulative action. Such evidences are a very slow, intermittent pulse; nausea and vomiting; and a sensation of bodily weakness.

21. There are some people who cannot tolerate certain drugs, just as there are some people who cannot tolerate certain foods. If the nurse notices a condition on the part of her patient that seems to her to indicate a failure to tolerate the medicine given, she should at once report the condition to the doctor.

Manner of Giving Medicines.

Medicines are introduced into the body in five different ways, namely:

1. Per mouth (swallowing, gargling, spraying).
2. Per rectum (where patient is unable to take it by mouth).
3. By skin (rubbed in).
4. Hypodermically.
5. By inhalation through the nose.

The doctor will direct the nurse as to the proper method to employ for her patient.

When medicine is given hypodermically, one-third less is given than when it is given by mouth. When it is given by rectum, twice as much is given as when it is given by mouth. When pills and powders are dissolved they act more quickly than when they are not. The dose of medicine is regulated not only by the disease, but also by the age, weight and sex of the patient, as well as by the method of administering it. When the nurse realizes these facts, she will understand why it is necessary that she should always have instructions from the doctor, not only as to what sort of medicine to give, but also as to how much to give, as well as how to give it.

HOME MEDICINE EQUIPMENT.

Every home should have:

(a) Essential equipment for the sick room.

(b) Medicines.

(c) Disinfectants and deodorants.

The Essential Equipment for the Sick Room should include a fountain syringe, a hot water bag, a bedpan, a urinal, a clinical thermometer, a bath thermometer, a screen for the bed, and a tray.

Many of these things can be improvised from materials in the home. A screen can be made by pinning a sheet, shawl, or blanket over a clothes-horse. A basin may be used as a bedpan and a mason jar as a urinal. Bottles or mason jars may be heated, filled with hot water, and used instead of hot water bags. Bricks or flat-irons may be used for the same purpose.

There should be on hand, also, bandages one inch and two inches in width, absorbent cotton, and medicated gauze. The bandages may be made from a well worn sheet. Tear the cloth the desired width, remove the selvage, lay the two ends to be sewed together flat, one on top of the other, and sew firmly. Remove the raveled threads, wind firmly, and fasten with a pin.

Medicines: Among medicines found in every home should be the following:

Iodine, to be used for disinfecting cuts, wounds, etc.

Olive Oil, for rubbing babies and invalids.

Castor Oil, for use as a cathartic, especially for children.

Epsom Salts, for use as a cathartic.

Vaseline, for soothing burns, chapped hands, etc. Also used to lubricate thermometers used in taking rectal temperature, etc.

Boric Acid, used in saturated solution for bathing baby's eyes and genital organs.

Carron Oil, for burns.

Glycerine, used to prevent chapping of the lips and hands.

Mustard, as an emetic and for making plasters. One teaspoonful of mustard in a glassful of lukewarm water makes a satisfactory emetic.

Turpentine, for use in the preparation of counter-irritants, such as turpentine and lard.

Adhesive Plaster, for protecting cuts from dirt.

Aromatic Spirits of Ammonia, for use when the heart action must be stimulated, as in cases of fainting, shock, etc. Mix a teaspoonful of it with a glassful of water. This may be given to the patient in tablespoonful doses or all at once in severe cases. Aromatic spirits of ammonia must not be confused with the ordinary household ammonia, which is something quite different. Aromatic spirits of ammonia should not be taken often without the doctor's orders for its cumulative effects upon the heart are likely to be very injurious.

Medicated Alcohol, for disinfecting clinical ther-

mometers, for bathing weak patients or those that are likely to develop bed-sores.

Disinfectants and Deodorants: The disinfectants most commonly used are carbolic acid, lysol, and chloride of lime. All of these are deodorants as well, although fresh air and sunlight are the best deodorants. Practically all disinfectants are violent poisons if taken internally. They should, consequently, be labeled poison and kept in a part of the medicine cupboard that is completely separate from the part where medicines are kept.

Caution.

All drugs and medicines in the home medicine cupboard should be labeled. Always keep medicine out of the reach of children. Never leave it standing on window-sills or tables. Keep all sick room equipment where it can be found instantly.

LESSON 6.

TEMPERATURE, PULSE AND RESPIRATION.

Temperature.

Temperature is the degree of body heat as measured by a clinical thermometer. The temperature of the body is not ordinarily affected by the temperature of the air. It may be increased by hot drinks, stimulants, exercise, temper, hot foot baths, hot mustard baths, enemata, and disease. The most common cause of rise of temperature are the toxins of bacteria.

The temperature is lowered during digestion and sleep; by perspiring; by cold bathing; from the effects of exposure to cold and starvation, and by certain diseases.

The average normal temperature of an adult, taken under the tongue, is 98.6°. Blood heat is 100° Fahrenheit. It may range from 98° in the morning to 99° in the afternoon. If it is under 98°, it is spoken of as subnormal; if it is above 99.5°, it is fever. The temperature varies more in children than in adults, a degree or two above normal usually being nothing to worry about in a child, unless associated with other symptoms of illness. A sudden drop in temperature is usually a serious matter. This is especially true in typhoid fever. In cases of sunstroke, patients have been known to live after having a temperature of 112°.

To take the temperature we use a special thermometer, known as a clinical or temperature thermometer.

Temperature is taken:

(a) Per mouth,

(b) Per rectum,

(c) Per axilla, or armpit.

Before using the thermometer always wash it in cold water and dry it. Then shake it down until the mercury stands at 96°, or lower.

If you are going to give the thermometer by mouth, place it under the tongue and close the lips firmly together. Leave it under the tongue for two minutes; then remove it; take the reading; record the reading at once; wash the thermometer carefully.

The temperature per mouth should not be taken immediately after the patient has partaken of hot or cold food or drink, because this effects the temperature of the mouth.

Taking the temperature per rectum is necessary often in the case of infants, delirious patients, drowsy patients, and mouth breathers. The readings by this method are about one-half degree higher than those by mouth. The thermometer used for taking rectal temperature should never be used for taking mouth temperature; but if it is so used it should first be disinfected by dipping it in pure alcohol, or into two per cent. solution of carbolic acid.

When taking the temperature per rectum, rub the thermometer with vaseline or olive oil; insert it two or three inches; leave it in place for three minutes; remove it and read; record the reading at once; wash the thermometer.

Taking the temperature under the armpit is less accurate than taking it by mouth or by rectum. When taking it by this method first dry the armpit thoroughly. Then place the thermometer in the armpit and hold the arm tight against the body for five minutes. Temperature readings by this method are one-half degree lower than those taken by mouth.

When the nurse records temperature readings she should always state which method was used in getting them.

Pulse.

Each time the heart contracts it forces blood into the arteries. This distends them, and it is this distention at regular intervals, corresponding with the beating of the heart, that is called pulse. The pulse is the most important index of the physical condition of the patient. The temperature may be high, but if the heart action as indicated by the pulse remains strong and regular, there is little reason for alarm.

The pulse may be taken wherever the arteries come near the surface of the body, – at the wrist, at the temple, at the angle of the lower jaw, in the groin, near the heel, and in the neck. Pulse is usually taken, however, at the wrist. In taking it, place the second and third fingers gently over the artery. If you use the thumb, you may be counting your own pulse instead of the patient's. Do not press too firmly. This sounds quite simple, but in reality counting the pulse is difficult except in perfect health. It is not uncommon for a young nurse to count a patient's pulse several times and get a different result each time. The nurse will need

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CLINICAL RECORD

MUNICIPAL CONTAGIOUS DISEASE HOSPITAL

CITY OF CHICAGO

Name...Case No..Hospital Physician..

te d ur	Temp.	Pulse	Resp.	MEDICATION AND TREATMENT	NOURISHMENT	NOTES ON RESULT OF MEDICATION AND CONDITION OF PATIENT	No. Stools	Urine Oz.

a watch that records seconds in order to take the pulse satisfactorily. The pulse may be counted for a full minute, or it may be counted for a half minute and that result multiplied by two.

The pulse rate varies greatly in different persons and at different ages in the same persons. The pulse is quickened by eating food, by exercise, by excitement, and by disease, and the rate is lower when lying down or sleeping than it is while standing or while walking about.

The normal pulse rate for males varies from 60 to 72; for females from 65 to 80. The normal rate for very young babies is from 124 to 144; for babies from six months to a year it is from 105 to 115; for children from two years to six years it is from 90 to 105. The child's pulse rate becomes the same as the adult pulse rate when the child is about twelve or fourteen years of age. In old age the pulse becomes slower.

In feeling the pulse we consider not only its frequency, but also its force, volume, and rhythm. The normal pulse is recognized by its perfect rhythm, the equal force of successive heart beats and the medium size of the artery.

The regular recurrence of heart beats is called rhythm. As to rhythm, pulse is classified into classes – regular and irregular. Sometimes pulse may be spoken of as intermittent, – that is, a beat is lost from time to time. Irregular and intermittent pulse may be caused by:

(a) The condition of the heart or respiratory organs.

(b) Acute disease.

(c) Certain conditions of the nervous system.

The force of the pulse varies greatly and is spoken of as either strong or weak.

The nurse should take the pulse of the patient at least twice daily. In acute illness it should be taken at least every four hours. It is customary to take the pulse and the temperature at the same time.

Respiration.

The act of breathing in and breathing out air is respiration. We call the breathing in "Inhalation," and the breathing out "Exhalation." Respiration, therefore, consist of inhalation and exhalation.

The air is composed of oxygen (20 parts), nitrogen (79 parts) and one part other gases. We breathe air in through the nostrils, and down through the pharynx, larynx and bronchial tubes into the lungs. In the lungs it passes through the thin walls of the air cells directly into the blood, which is purified by means of the oxygen that it takes up.

We breathe out much of the nitrogen of the air and, in addition, carbon dioxide, which the blood has gotten rid of while passing through the lungs.

Carbon dioxide is taken up by plants and vegetation generally, and is used by them in their growth. They in turn give oxygen off into the air. Animal life would soon

perish from the earth if there were no vegetation, because animal life cannot be maintained where there is a great quantity of carbon dioxide in the atmosphere. Expired air containing two or three parts of carbon dioxide in one thousand parts of air will produce headache, nausea, drowsiness, and will lower our resistance to disease.

The oxygen of the air is used up not alone by being breathed in by human beings and other animals, but it is also used up by the burning of fires or lamps.

The normal rate of respiration of the normal adult is from 16 to 20 per minute. For infants it is 30 to 35. For sleeping children it is from 20 to 25.

In counting the respiration do not let the patient know that you are doing so, for respiration can be easily controlled. Usually the nurse can obtain the rate by placing her arm on the chest of the patient and counting the respiration while pretending to take the pulse, or the nurse may count the movements of the bed clothing over the chest while the patient is sleeping. The nurse should count for a full minute. The respiration of an infant is most easily taken by placing the hand on the abdomen, and counting the number of times it rises per minute.

In recording the respiration the nurse should state not only the rate, but also whether the breathing is regular or irregular; difficult or easy; noisy or quiet; deep or shallow; and abdominal or thoracic.

LESSON 7.

USES OF WATER AS A THERAPEUTIC AGENT.

Baths, Enemata and Douches.

In the body, water is the most abundant substance, composing about two-thirds of the body weight. The circulatory system is dependent on water to float the various nutritive elements and convey them to the tissues that need them. Water is constantly passing out of the body through the expired air, the skin, the kidneys, etc. Thirst is nature's call for a fresh supply. The remedial properties of water may be divided as follows:

(a) Tonic and stimulating properties.

An increase in circulation and temperature may be produced quickly by a full, hot bath. A quick, cold sponge under proper conditions also has a tonic effect.

(b) Sedative properties.

Cold or tepid water, properly used, is one of the most effectual methods in lowering the temperature, slowing the pulse, and allaying restlessness.

(c) Anti-spasmodic properties.

Water has proven its value as an anti-spasmodic in infantile convulsions, hysteria, puerperal eclampsia, and other affections of the nervous system.

(d) Anodyne properties.

In relief of pain few remedies are so effectual as water. It may be applied either hot or cold.

(e) Laxative properties.

By increasing the secretions of the liver and intestinal glands, water acts as a natural laxative. Used as an enema it accomplishes the same purpose.

BATHS.

No bath except a cleansing bath should ever be given by a nurse without the doctor's orders. In cases of Bright's disease a cold bath may prove fatal to a patient. As a matter of fact, Lassar produced Bright's disease in rabbits by two cold baths.

Cleansing Bath.

The bath most commonly given is the cleansing bath and a cleansing bath should be given each day unless the doctor prescribes otherwise. To give such a bath to a patient in bed, first protect the bed with bath blankets. It is needless to say that the room should be warm and free from draught, and that everything needed should be at hand before beginning the bath.

Turn back the bed spread, keeping the patient covered with either a blanket or a sheet. Wash the patient's face, ears, and neck, and dry them carefully. Bathe one arm at a time, keeping the rest of the body well covered meanwhile, and then bathe the chest. Change the water and have warm water for bathing the abdomen, as it is very sensitive to cold. Next bathe the legs, one at a time. Finally turn the patient on his side and bathe his back. Last of all bathe the genital region. The patient should take this part of the bath himself, if possible. Dry the back, and

rub it with alcohol, then powder it. The cleansing bath need not take more than fifteen minutes.

When changing the gown, slip off the sleeves of the soiled gown and pull it toward the neck, put the arms in the sleeves of the clean gown, support the head and shoulders, slip the soiled gown off, draw the clean one over the head, and pull it down smoothly. If an arm or shoulder is injured, slip the sleeve off the arm on the opposite side first.

The patient's mouth should be thoroughly washed out at the same time that he is given the cleansing bath. It may be washed with warm water or with a mouth-wash. Some simple home mouth-washes are salt water, and baking soda dissolved in water.

After bathing the patient comb his hair. In combing the hair of female patients hold the hair tightly in the left hand and comb with the right hand, combing from the ends first. Don't braid the hair too tightly. The braid should be back of, and below, the ear.

If the patient appears weak or tired following the bath, he should be given a cup of hot broth or milk. The best time for giving a sponge bath is about one hour after breakfast.

Cold Sponge Bath.

A cold sponge bath should never be given without the doctor's orders, and the temperature of the water and the length of the bath will be determined by the doctor.

To give a cold sponge bath:

(a) Have ready a deep basin, half full of water, at the required temperature; a bath thermometer; a basin of chopped ice; a large washcloth; an ice cap, and a hot water bag.

(b) Remove the top bedclothes and the nightgown, covering the patient with a single blanket or sheet. Roll under him, above the usual bedclothes, a rubber sheet large enough to cover the bed. If desired, a sheet may be placed between the rubber and the patient, but it is not necessary.

(c) Place the ice cap, or a cold compress, on the head, and the hot water bag at the feet.

(d) Sponge with a wet sponge in long single strokes, exposing each limb and the entire chest in turn, dividing the time equally between each. For the last five minutes, turn the patient and sponge the back in the same manner. Regulate the temperature of the water by adding ice.

(e) If the patient shivers violently, or if his face, fingers, or toes begin to turn blue, remove him from the bath at once.

(f) Remove the rubber sheet and wrap the patient in a sheet for twenty minutes; wipe the body dry; rub the back with alcohol, and take the temperature.

Cold Pack.

The temperature and length of cold pack will be directed by the doctor. When giving it protect the bed by a rubber sheet, by a thick quilt, or by a folded blanket. Wring a sheet that is folded in two or three thicknesses out of water at the desired temperature, and place it under

Hot Dry Pack.

FIGURE 11.

Improvising for Croup Tent, etc.

FIGURE 12.

HOW TO MAKE A PAPER DRINKING-CUP.

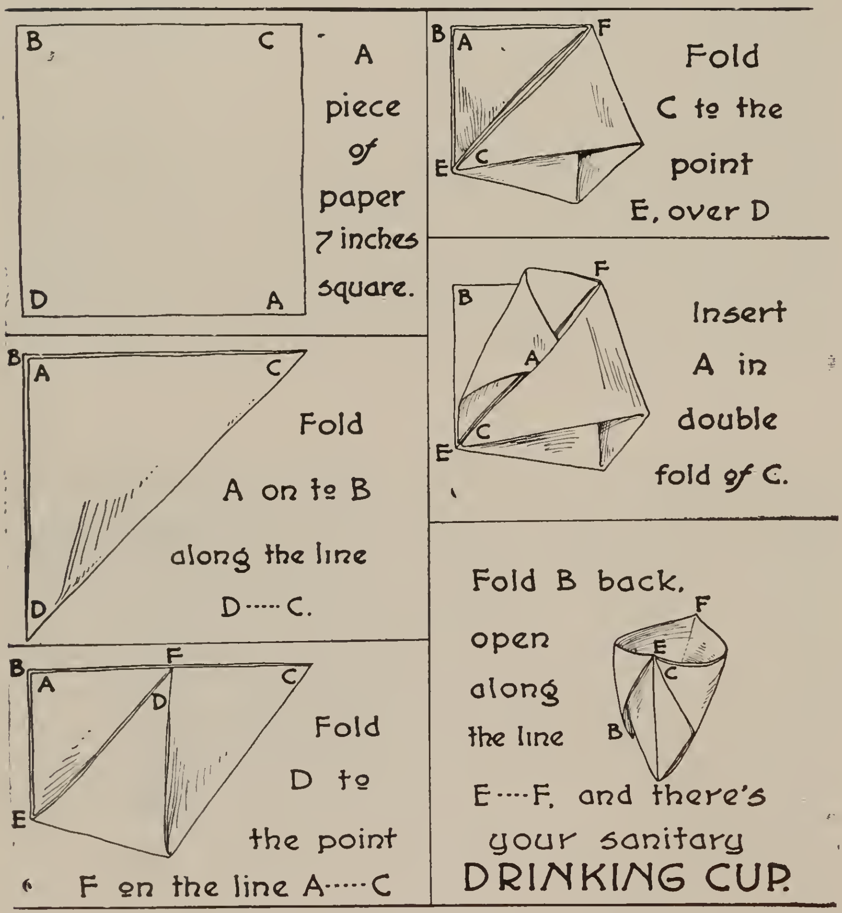


FIGURE 13.

the patient. Wring another sheet out and place it over him, and wrap the arms in large towels wrung out of water. Apply heat to the feet and an ice cap to the head while giving this bath.

Hot Pack.

To give a hot pack wring blankets out of hot water that is several degrees hotter than you want the pack to be, because the blankets will cool rapidly. Wrap the hot blankets about the patient, and cover with heavy blankets to keep in the heat. If necessary pile hot water bottles, or heated irons, around the patient to help maintain the heat. Keep a cold compress on the patient's head while giving this bath.

Foot Bath.

A hot foot bath is valuable in restoring vitality, in breaking up a cold, in relieving headache, and sometimes as a remedy for insomnia. In the latter case it acts by drawing the blood from the brain to the extremities, thus inducing a temporary anemia of the brain. The bath is prepared at 100° F. and raised as high as can be borne without faintness. If the patient is in bed, the bed clothes should be turned back and the bed protected by a rubber sheet. The bath is placed conveniently and a light blanket kept over the back and limbs during the process of bathing.

Sweats.

Place a rubber sheet and a blanket, both hot, under the patient. Remove the nightgown and roll it in a hot blanket to keep it warm; place hot water cans or bottles,

rubber hot water bags, or hot bricks wrapped in flannel, around the patient; cover with another hot blanket; cover that with a second rubber sheet; tuck both firmly in under the mattress and around the neck; cover with as many blankets as may be desired. Apply, as usual, cold compress or ice bag to the head; give drinks freely.

CAUTION.

The cans, etc., must be carefully covered and arranged outside the enveloping blanket in such a manner that the patient cannot come in contact with them. This is necessary in order to avoid burns.

ENEMATA.

An enema is a fluid injected into the lower bowel by way of the rectum. It is employed to relieve constipation; to check diarrhea; as a vehicle for the administration of food, water, medicine, or stimulation to the general system, and as a local application.

Enemata should never be given except under the doctor's directions. Giving them has been known to kill people after surgical operations. When they are given the nurse must exercise great care to avoid injecting air into the bowel, must give them slowly through a small rubber tube, and must use a rubber catheter. In giving enemata to babies or young children most doctors recommend using a small rubber ear syringe.

The nurse must remember, also, the first flow of fluid will be chilled by running through the tube, and

should be run off before the catheter is inserted, if the enema is to be given warm or hot.

When giving an enema place the patient on his left side or flat on his back with the knees flexed in order to relax the abdominal muscles. Place a small rubber sheet, covered with a thick towel, under the patient; roll the nightgown up out of the way; use a single sheet or blanket as a covering. Be careful to insert the catheter gently. After the required amount of water has been given remove the catheter and assist the patient to the bedpan or to the commode, which should be at hand before the enema is begun.

The temperature of an enema varies with the results to be obtained, and should always be directed by the doctor.

A douche is a washing out of any of the body openings. Douches may be aural, nasal, or vaginal. They must never be given without the doctor's orders, and should never be given except by very skilled nurses, unless the doctor is present.

LESSON 8.

SYMPTOMS OF SICKNESS.

A symptom is any evidence that leads one to think that a person is ill. Many diseases and deformities may be prevented if the conditions are attended to before they are too far advanced; therefore, the nurse should train herself to see symptoms. Much of the difference between a trained nurse and an untrained nurse lies in their ability to see and describe symptoms accurately. To detect signs of illness promptly, and report them at once to the doctor, may mean the prevention of serious illness. The usual symptoms of sickness are loss of appetite, fever, chills, pain, unnatural positions in bed, and certain conditions of the sputum, urine, and feces.

A person in good health will eat three meals each day. Whenever anyone does not want food there is something wrong. It may be that he has overeaten and the stomach wants a rest, or it may be that he is ill.

If lack of appetite continues for some time, and is associated with loss of weight, the patient should consult a doctor. These symptoms are enough to make one think that possibly tuberculosis may be present.

A high temperature associated with chilliness, flushed face, bright eyes, restlessness and a dry skin, always indicates the presence of fever of some sort.

Pain is a danger signal, people in good health not

being thus afflicted. Often the nurse will have to judge of the presence of pain by such signs as restlessness, crying, the expression of the face, and positions indicating pain. This is especially true in the case of babies, children and unconscious or hysterical patients.

The position in bed which a patient assumes while sleeping may often indicate the presence of certain diseases. If the patient can sleep only while lying on one side, some organic trouble is probably present. If he sleeps with his knees drawn high, he is probably suffering from some bowel disturbance. The presence of colic is suggested by the patient insisting upon lying on his abdomen.

Puffiness around the eyes, on the backs of the hands, or about the feet or ankles, may indicate kidney or heart trouble, and should always be reported to the doctor.

Any deformity of the spine or evidence that one leg or arm is not so large, or is not so active, as the other, or continued pain in the knee, may be an indication of spine or hip disease.

A bad breath may indicate decayed teeth, diseased tonsils, or stomach disturbances. Mouth breathing usually indicates the presence of enlarged tonsils or adenoids.

Constipation, diarrhea, loss of weight, pallor, and sleeplessness are all danger signals.

In the adult in normal health the bowels move once or twice a day. The discharge is light or dark brown in color, soft and more or less formed. Any variation from this appearance, especially the presence of blood in the

discharge, or any unusual odor, should be noted by the nurse and reported to the doctor.

The average healthy adult discharges from the body during each twenty-four hours about a quart of urine. Any marked increase or decrease in the quantity may indicate the presence of disease. Any unusual odor should also be noted. If fresh urine has a marked odor, as of ammonia, decomposition within the bladder is indicated.

Sputum is what is coughed up. A healthy person does not cough; therefore, when there is sputum there is some disease. All sputum should be discharged into paper napkins, which should be burned after they have been used.

The doctor may ask for a specimen of sputum, or for a specimen of urine. When taking a specimen of sputum the nurse should try to secure it early in the morning, before the patient has eaten. Have the patient cough and spit two or three times into a large-mouthed bottle which is to contain the specimen. Cork the bottle at once, and label with the name and address of the patient. The bottle used by the Health Department for obtaining sputum specimens is about one inch square. These bottles may be obtained free upon request.

If the doctor asks for a specimen of urine care must be used in obtaining it. It is best to use the first that is passed in the morning. Have the bedpan or urinal scalded and perfectly clean. Then put it into a bottle which together with the cork has been well cleaned and boiled. Ordinarily 4 ounces is sufficient, but 24 hour specimens are desired. The bottle should be labeled with the name of the

patient and the date, and kept in a cool place until it is given to the doctor.

Finally it must be remembered that there are many diseases that have no noticeable symptoms during the early and curable stage of the disease. This is especially true of diseases of the heart, of the blood vessels, and of the kidneys. There are laboratory and physical tests, however, that distinguish hardening of the arteries, high blood pressure, Bright's disease, etc., and it is, therefore, well for everyone to go to a competent physician, or to a good hospital, at least once a year for a complete physical examination. This is the only way in which many diseases can be detected in their curable stages. When pain and other noticeable symptoms appear in this class of diseases, the disease has reached such a point that there is little chance for cure.

Keeping Bedside Notes.

The home nurse should keep bedside notes. She should not rely upon her memory. If she has a history chart, keeping notes accurately, under the various headings, is not difficult. In addition to temperature, pulse and respiration she should note the kind of sleep—whether restful and quiet, or disturbed; the amount of sleep, and when taken. She should itemize the articles of diet, and note the amount of food taken. She should state the amount of medicine given and when given, and should make a note of all discharges from the bowels and the bladder.

In keeping bedside notes be sure the statements of observations are facts. Tell as much as is asked for. If any unusual condition arises, such as a chill, convulsion, or hemorrhage, write it on the history chart, under "Remarks." The report should be full, accurate and neat.

LESSON 9.

FIRST AID.

First aid is the necessary emergency treatment given while waiting for the doctor to arrive. It is necessary to know not only what to do, but also, what not to do. First aid never takes the place of treatment by the doctor, except in cases where the home nurse definitely knows the accident or illness to be of little significance. Sometimes apparently trivial injuries, if not treated promptly by a doctor, may have serious consequences; therefore, the nurse should be very cautious in deciding to bear the responsibility alone.

FIRST AID TO THE SICK.

Hemorrhages.

Hemorrhages may be external or internal. External hemorrhage may be stopped usually by exposure to air, or by pressure of a dressing, or bandage.

Internal hemorrhage, or bleeding inside the body, may be caused by an ulcer or cancer, tuberculosis, rupture of some internal organ, or blood vessels, etc.

There are signs by which one may tell that there is an internal hemorrhage. The patient often faints from no apparent cause. The breathing is often irregular, feeble, and sighing. There may be pain, but not always. The patient suffers from air hunger and from dizziness. If the hemorrhage is not stopped soon the patient's skin becomes very pale, and the pulse rate may increase to 100 or 115.

The first thing necessary in treating internal hemorrhage is to secure complete rest. If it is an abdominal hemorrhage, elevate the lower part of the body and lower the head. Application of cold compresses to the part affected will cause a contraction of the walls of the vein or artery, and may stop the bleeding.

Never use stimulants in case of hemorrhage unless the patient becomes very faint and it appears necessary to give a stimulant in order to keep the patient alive until the doctor comes, because stimulants cause a more vigorous action of the heart and consequently a greater loss of blood. The stimulant most often used is aromatic spirits of ammonia.

Mix one teaspoonful of aromatic spirits of ammonia in one half glass of hot water and give frequent doses of a teaspoonful or more from this mixture. A drink of hot coffee, or hot tea, may be given in addition.

A doctor should always be called in case of internal hemorrhage, for such a hemorrhage is likely to be a symptom of some serious disease. To distinguish between a lung and a stomach hemorrhage remember that blood from the stomach is vomited and is dark colored, while that from the lungs is coughed up and is frothy and bright red.

<u>External hemorrhages</u> are usually caused by cuts or injuries, and their treatment will be considered under "First Aid to the Injured''. A possible exception to this is nasal hemorrhage, which is often caused by picking the nose. It may also be caused by fever, foreign bodies in the nose, injury to the nose, skull fracture, chronic nephritis or its cause

may be idiopathic, that is, it may have no apparent cause.

A nasal hemorrhage may usually be ended by rest. Have the patient lie down quietly. Often a cold compress or ice applied directly to the back of the neck will stop a nasal hemorrhage. Sometimes pressure applied with the finger to the nostril on the side that is bleeding will be sufficient. Packing with cotton or gauze for a few minutes may cause the blood to clot, and so stop the hemorrhage. If this does not suffice, send for a doctor.

Profuse Menstruation.

The person suffering from profuse menstruation should lie quietly in bed without pillows until the abnormal condition is past. In severe cases, the doctor should be consulted.

Infantile Spasms.

Convulsions in children may be due to many causes, the most common of which is intestinal trouble, especially if associated with rickets. Other causes are worms, brain fever, and other acute infectious diseases.

The spasms usually begin in the hands and then may involve one side or the entire body. The eyes are fixed and staring; the body becomes rigid. Grinding of the teeth and screaming are common at the outset.

When convulsions occur in a child always call a doctor at once. While waiting for the doctor to come the nurse should give the sufferer a hot bath or a mustard bath. If mustard is used the water should not be above 80° Fahrenheit, as a greater degree of heat will destroy the effect

of the mustard. When mustard is not used the temperature of the water should be about 93° Fahrenheit. If a doctor is not available a colonic flushing or a dose of castor oil should be given to empty the bowels.

A cold compress, or an ice bag, may be applied to the sufferer's head, especially if there is fever.

Fainting.

Fainting is usually caused by lack of sufficient blood in the brain. People who faint often, or who faint easily, should consult a doctor.

When a person shows faintness it is sometimes possible to prevent fainting by getting him into the cold air, or by applying cold water to the face, or by having him lie down. If fainting has occurred lay the patient flat on the floor. Loosen the clothing about the neck and waist and see that the patient has plenty of air. The face may be sprinkled with water. Apply smelling salts or aromatic spirits of ammonia to the nose. When the patient is able to swallow give him a drink of hot tea or coffee, or of aromatic spirits of ammonia well diluted.

If the patient is not easily revived, send for a doctor, for the fainting may be caused by internal hemorrhage.

Unconsciousness.

Before treating a patient who is unconscious, the nurse should first know the cause of the condition. Unconsciousness may be due to hemorrhage, sunstroke, suffocation, uremia, poisoning, or shock. A doctor should always be sum-

moned immediately. Emergency treatment for unconsciousness due to suffocation, or to drowning, will be discussed under "First Aid to the Injured''.

Unconsciousness due to shock by electricity or by lightning, should be treated at a hospital. Emergency treatment consists in immersing the patient up to his neck in water, preferably in a running stream, although a bathtub is better than nothing.

Sunstroke.

Sunstroke is caused by excessive heat and usually occurs when one is exposed to the direct rays of the sun, but a very frequent contributing factor is alcoholism. In case of sunstroke send for a doctor at once. Remove the patient to a cool place; remove all unnecessary clothing; apply cold compresses or ice to the head and chest; and give cold water freely when consciousness returns. If the nurse gives the patient a cold tub bath, or a cold pack, she must employ a continuous rubbing to prevent shock. In cases of sunstroke stimulants should generally not be given. The temperature in sunstroke is elevated.

Heat Exhaustion.

Heat exhaustion is prostration and collapse due to exposure to excessive heat, particularly when combined with physical exhaustion in hot, closely confined rooms. In such cases the nurse will send at once for a doctor; will remove the patient to a cool place, will have the patient lie down; administer aromatic spirits of ammonia or hot coffee or hot tea; give the patient sips of hot water to drink, but do not apply cold. The temperature in heat exhaustion is usually subnormal.

Apoplexy.

The nurse must be careful in making a diagnosis of apoplexy, as the symptoms of the unconscious state of intoxication differ very little from apoplexy. The chief difference is in the appearance of the pupils of the eyes. In apoplexy the pupils are large and may be unequal in size. The eyeballs are insensible to touch, and in genuine apoplexy there is, usually, a paralysis of one side of the body. A paralyzed part will drop absolutely helpless if raised up and released. In caring for apoplexy the nurse should send for a doctor at once. She should lay the patient in a dark room, with his head raised. She should put ice, or a cold compress to the head, and a hot water bag at the feet. Stimulants should not be given, and nothing should be done to produce vomiting.

Shock.

All injuries are more or less accompanied by shock. If the condition approaches prostration or collapse the nurse should send at once for the doctor. Meanwhile, she should warm the patient, and should stimulate him with hot tea, hot coffee, and aromatic spirits of ammonia. If the case is critical the patient may be given a much larger dose of aromatic spirits of ammonia than was indicated for fainting. Rub the patient's limbs vigorously, rubbing toward the heart.

If shock is known to be due to hemorrhage, the hemorrhage must first receive attention, as to treat shock first might be to let the patient bleed to death.

Hiccough.

Hiccoughs are not serious in well persons, unless

they are very difficult to stop. In surgical cases, however, they are often very serious indeed. If a person who has been operated upon begins to hiccough, the doctor should be notified at once. Well persons with hiccoughs may usually stop the trouble by drinking a large quantity of water or by holding their breath.

Colic.

Colic is usually a disease of babies, yet it may attack those of any age. Ordinarily it is caused by over-feeding, or by chilling. No one should ever bathe or go swimming immediately after eating a meal. This is a common cause of colic among half-grown children. Colic may be caused not only by overeating, but also by eating indigestible food such as green apples or green plums.

The treatment usually varies with the cause. In babies relief is usually quickly secured by the application of heat to the abdomen. It is also well to give the baby a little warm water to drink. In the case of children who have eaten green fruit it is well to give an emetic as quickly as possible. This emetic may be a teaspoonful of salt, of baking soda or of mustard in half a glass of lukekwarm water.

Colic is more likely to be serious in the case of grown people. If it is not relieved by the application of heat, by an emetic, or by a dose of Jamaica ginger it is well to call a doctor. A person suffering from colic should not eat until the attack is completely over.

Whether in the case of babies, children or grown

people, a doctor should be summoned if the colic is accompanied by fever or by vomiting.

Styes.

Styes are usually associated with inflammation of the edge of the eyelid—sometimes they are due to eye strain. The eyes should be examined by an oculist, and the cause of strain removed.

Prickly Heat.

Prickly heat usually affects babies, but may attack anyone who is too warmly dressed. The remedy is to dress less warmly. While the skin is broken out relief may be secured by liberal use of talcum powder.

HOT APPLICATIONS.

In treating cases where heat is to be applied, the nurse will often find poultices or stupes more satisfactory than a hot water bag. The stupes and poultices furnish moist heat; hot water bags and bottles, dry heat.

A poultice may be made from any substance which, when parboiled, is capable of holding heat and moisture. The most satisfactory home-made poultice, however, is made of flaxseed meal, which retains the heat for a longer period than such substances as bread, etc. Flaxseed, or linseed, meal may be mixed with from one-half to one-third the quantity of bran and still produce a satisfactory poultice.

In making a poultice the water must be boiling, the basin, spoon, etc., must be heated, and everything that will be needed must be at hand before beginning in

order that the poultice may not cool while it is being made.

Poultices may be spread on old muslin. The material used should be two or three inches larger than the required poultice, to allow for turning in the edges. Two or three cupfuls of boiling water are poured into a heated basin to make an average size poultice. Run the meal through the fingers of the left hand into the boiling water, stirring all the time with the right hand. When the mixture sticks together and will come clean from the sides of the basin, or will drop clean from the spoon, it is the right thickness.

Turn it out on the muslin, spread it evenly with a heated knife or spoon, turn the edges in all around, and stitch with a needle and thread. Roll the poultice up in a warm towel and carry it to the patient.

Before applying a poultice the nurse should hold it against her face to see that it is not too hot. When the poultice is in place it should be covered with a piece of thin rubber, which should be covered with a layer of cotton in order to keep in the heat. The whole is kept in place with a binder or a bandage.

A poultice should not remain on over an hour and should be removed sooner if it gets cold. A cold poultice is uncomfortable and of no account. If the skin is not badly reddened by the first poultice, apply a second as soon as the first one is removed. If the skin is badly reddened, rub it gently with sweet oil, cover with a thickness or two of flannel, and apply the next poultice as soon as the redness disappears.

Flaxseed poultices are used less now than in former years. There are, upon the market, various preparations containing clay as a base, that hold heat and moisture better than the old-fashioned poultices. These preparations have the further merit of being easily applied. Poultices made from them are of a uniform consistency, and are much more tidy than the usual flaxseed, bread, or onion poultice.

To prepare a stupe lay a yard of linen toweling in a deep basin, letting the ends hang over the edge of the basin. Fold two or more layers of soft old flannel, or blanket, and lay it in the basin on the toweling. Pour boiling water over the flannel. Pick up the ends of the towel and twist them in opposite directions until the flannel is quite dry. If water is left in the flannel it will burn the patient. Apply this flannel directly to the patient's skin and cover it with a piece of light rubber sheeting, and that with a pad of absorbent cotton in order to retain the heat.

Hot Water Bags and Bottles.

Heat is frequently applied by the aid of the hot water bag and by bottles made of glass or metal. A jug filled with hot water is frequently used to heat up a bed. The rubber bag is most frequently used and more readily adapts itself to any part of the body and bed. When a hot water bag has been filled the nurse should see to it that the bag has little or no air or steam in it. The steam on top of the water can be expelled by holding it against her chest and pressing it out and then immediately introducing

the stopper. Hot water bags should never be filled with boiling water, or with water hot enough to scald the patient in case the bag should begin to leak.

Caution.

No hot water bag, metal or glass bottle, jug or any other hot substance should be placed next to any part of the patient until the nurse has held the same to her cheek long enough to make sure it will not burn.

Hundreds of patients have been severely burned in hospitals and homes by omitting to do this. This is especially likely to occur in the case of unconscious patients.

Cold Compresses and Ice Bags.

Cold is usually applied by means of compresses,—cloths wrung out of cold water or ice water. Where cold must be applied for some time, one may use an ice bag. Rubber ice bags must be handled carefully or the sharp pieces of cracked ice will tear them.

LESSON 10.

FIRST AID TO THE INJURED.

Wounds, including cuts, stab-wounds, gun-shot wounds, scratches, etc.

Place a small portion of sterile gauze over the wound, cover with sterile absorbent cotton, and keep the dressing in place by means of a bandage until the doctor arrives. The air will not infect the wound, so take sufficient time to sterilize the gauze if it is not already sterile. If red streaks appear around the wound, if the patient has a chill, or if heat develops in the wound after it has been dressed, the doctor should be consulted again, for these symptoms indicate that infection is present.

Burns.

Dress by means of sterile cotton, saturated with Carron oil if it is available, or with linseed oil or olive oil, and protect dressing by a bandage until the doctor arrives. If no oil is available break an egg over the burn, as the white of egg will exclude air from the same.

Acid Burns.

Bathe the injured part with water or, if at hand, with water and weak ammonia, to wash away the acid, and then treat as other burns. In case of burns from carbolic acid (which is not a real acid), bathe freely with alcohol, or with lime water.

Fractures.

Definition: A fracture is a broken bone.

Classification:

(a) Simple—In which the bone has a simple break.

(b) Compound—In which the bone has broken through the skin and protrudes.

(c) Complicated—in which the bone has punctured another organ, such as a fractured rib puncturing the lung.

Signs and symptoms, or the points that may enable us to tell when a bone is broken:

(a) History of an accident or injury.

(b) Pain at, or near, the point of fracture.

(a) Loss of power, in the part, or inability to move it.

(d) Swelling about the point of fracture.

(e) Deformity of the limb.

(f) False motion—The limb can be moved abnormally.

(g) Crepitus—A scratching sensation when the broken ends are moved against each other.

Treatment:

(a) Keep the patient as quiet as possible, as any movement may make the fracture worse and cause more injury to the tissues around the fracture.

(b) Immobilize the fracture, that is, keep it from moving, which may be done as follows:

1. Splints—These may be made from thin boards, shingles, laths, heavy cardboard, or other firm material.

The splint should be padded well with cotton and should be long enough to extend well above and below the point of fracture.

After the splint is applied it should be held in place by means of a bandage, handkerchiefs, belts, straps, heavy cord, etc.

2. Other measures—Place one or two bricks wrapped in heavy cloth, blanket, etc., on either side of the fracture.

Or use pillows or blankets held in place by means of bandages, etc.

Caution.

In case of compound fracture never attempt to adjust the parts for fear of carrying infection into the tissues.

External Hemorrhage.

Definition: External bleeding from any portion of the body.

Classification:

(a) Arterial—Bleeding from an artery, indicated by bright red blood that spurts from the wound.

(b) Venous—Bleeding from a vein, indicated by a steady flow of dark red blood.

(c) Capillary—Bleeding from capillaries, indicated by oozing of brick-colored blood.

Treatment:

(a) Rest—keep the patient as quiet as possible.

(b) Pressure—Digital, by means of the finger or thumb, or with a pad of cotton or gauze held in place by means of a bandage.

Tourniquet—This may be improvised from an elastic suspender, but in an emergency a handkerchief, heavy cord, or bandage,

may be used. The bandage is tied around the injured member, between the injury and the heart. A stick is thrust through the knot and twisted until the tourniquet is tight enough to end the bleeding.

The points to be remembered are not to apply it too tightly, nor allow it to remain on too long, as the continued pressure may shut off all the blood supply and result in gangrene. When the doctor is long in arriving, loosen the tourniquet every ten or fifteen minutes, and renew the pressure as soon as the hemorrhage begins again.

(c) Thermal—Hot water as warm as it can be borne by the hand. Pour this over the wound continually or apply heavy towels wrung out of the hot water.

Sprains.

Definition: Joint injuries resulting from violent stretching, twisting, or partial breaking of the ligaments of the joints.

Symptoms: Immediate, severe pain, which increases when the joint is moved, and swelling of the joint.

Treatment:

(a) Absolute quiet and rest.

(b) Hot or cold compresses applied to the injury.

(c) Rubbing with alcohol, arnica or witch-hazel.

(d) The use of a splint, such as was used for fracture.

Remark: Severe sprains are not minor injuries and should always be cared for by a physician. In very severe cases an X-ray picture should be taken in order to be certain that there is no dislocation or fracture of bones.

Unconsciousness Due to Drowning or to Asphyxiation.

Treatment: Employ artificial respiration until the doctor arrives.

To do this, first strip the patient to the waist. Lay him on the ground, face down, but turned somewhat to one side. Stretch the patient's arm full length over his head. Kneel at one side of the patient, or astride him; but do not rest your weight upon him. Place your hands over the short ribs across the small of the back, with the thumbs nearly touching. Press upon the body, keeping the fingers well spread out so as to cover as much area as possible. The nurse must be careful not to exert too great pressure or she might fracture one of the patient's ribs. Release the pressure. Repeat this movement twelve to fourteen times a minute. The treatment should be persisted in at least an hour and a half. Many a life has been lost by stopping treatment when the first signs of returning life were noticed.

As soon as the patient is able to swallow, give him some warm brandy, diluted with equal parts of water. When fully restored place the patient in bed and cover him with blankets. Keep the patient quiet. Do not give any food except hot beef tea, or hot coffee, for several hours.

Dog Bite.

In all cases of dog bite take the patient to a doctor immediately, or call a doctor if the patient is unable to go. There is always too much danger of infection from a

dog bite to make it safe for the nurse to attempt to treat it herself.

Insect Bites, Spider Bites and Bee Stings.

Treatment: Apply household ammonia to the bite. In cases of severe bee stings, and in cases where ammonia does not allay the pain, go to a doctor.

Foreign Bodies in the Eye.

The most common foreign bodies lodging in the eye are bits of dirt, small cinders, pieces of steel, glass, etc.

The eye is very sensitive to these bodies, and the danger depends especially upon the force with which such bodies are carried into the eye. The greatest harm results from bodies that are lodged in the eye with a great deal of force.

The inconvenience and irritation experienced from any foreign body in the eye are very great and there is a marked tendency to rub the eye. This is, however, very harmful, and should be avoided. Oftentimes the secretions of the eye, the tears, will wash away the foreign body. A solution of boric acid may also be used in an eye cup, to bring about the same results.

If these simple means are not successful, then an attempt may be made to remove the foreign body with the rolled up end of a clean piece of cloth or handkerchief. Sometimes it is necessary to invert the eyelid over a lead pencil or similar article when the foreign body is lodged on the under side of the lid.

If these simple procedures are not successful then

a physician should be consulted at once. It is dangerous to wait until the inflammation becomes far advanced.

Foreign Bodies in the Nose or Ear.

Unless easily removed, foreign bodies in the nose or ear should be removed by a doctor. There is always danger that an inexperienced person will shove the body further into the nose or ear while trying to remove it. Hardened wax should always be removed from the ear by a doctor. An inexperienced person is likely to injure the ear-drum.

Bandages.

Kinds:

(a) Triangular——made by folding a square of muslin or cheese-cloth, and cutting on the diagonal. This bandage is used to bandage the head, the foot, the hand, the chest, or may be used as an arm sling.

(b) Roller——made by rolling tight a long strip of gauze or muslin. It is the bandage most often used and may be from one-half inch to six inches wide. When applying it hold it with the roll on top, and in the right hand.

(c) Four-tailed——made by slashing each end of a roller bandage. This is useful for face bandaging.

LESSON 11.

POISONS.

In all cases of poisoning the nurse must send promptly for a doctor. There are certain substances which it is safe for the nurse to give in all cases of poisoning. These are: Milk, raw eggs beaten up in water or milk, and strong tea.

It is safe to give olive oil, sweet oil, or salad oil, while waiting for the doctor's arrival, in all cases except cases of phosphorous poisoning, which is most likely to occur in the case of children who have gotten hold of phosphorous matches.

It is safe to give emetics in all cases of poisoning except when the lips, tongue, and throat are badly burned by acids or by caustic alkalis.

In any emergency where it is impossible to secure a doctor the nurse will give an emetic. On table-spoonful of salt, or one dessert-spoonful of mustard, added to a cupful of lukewarm water, makes a satisfactory emetic. After the patient has vomited thoroughly a large dose of castor oil may be given. This may be followed by quantities of milk or beaten raw eggs.

Some of the poisons most commonly used and the treatment for them are, as follows:

Carbolic Acid.

Symptoms: White spots on the lips, mouth and

tongue; vomiting; stupor; an odor of carbolic acid on the breath.

Treatment: Send for a doctor at once. Alcohol is the best thing to neutralize carbolic acid. If the carbolic acid has just been swallowed and diluted alcohol is close by, administer it at once. Soapy water is likewise good, also lime water. If nothing better is at hand give large quantities of milk. Apply external heat and stimulate by rectal injections.

Arsenic.

Arsenic is found in various forms of dyes, vermin destroyers, Fowler's solution, rat paste, poison fly paper and Paris green.

Symptoms: Immediate collapse, severe burning in the throat, excessive thirst, violent cramps, vomiting.

Treatment: Call a doctor. Give an emetic, followed by castor oil, a stimulating enema, and black coffee.

Mercury Poisoning.

Mercury is found in bichloride of mercury, blue ointment, etc.

Symptoms: Burning pain in the mouth, throat, and stomach; vomiting of bloody fluid, mucus and severe abdominal pains with purging; and later, diarrhea.

Treatment: Call a doctor; give an emetic, raw eggs and milk, flour and water, castor oil, external heat, and a stimulating enema of black coffee.

Alkali Poisons.

These include ammonia, caustic potash, caustic soda, lime and lye.

Symptoms: Acute severe burning pain, vomiting, and purging.

Treatment: Call a doctor at once. Give quantities of vinegar or lemon juice; give olive oil or sweet oil. Unless the throat and mouth are badly burned give an emetic.

Iodine.

Symptoms: Burning and blistering of the mouth, pain in the throat and stomach, vomiting, purging, excessive thirst, and collapse.

Treatment: Send for a doctor; give an emetic; give starch and water by mouth.

Phosphorous.

Phosphorous is used on some brands of matches and in several poisons for rats and vermin.

Symptoms: Pains in the abdomen, vomiting, and purging.

Treatment: Send for a doctor; give an emetic; give one-half teaspoonful of turpentine in a glass of milk or water.

Narcotics.

The most common narcotic poisons are morphin, codein, laudanum, paregoric, opium, Dover's powders, and chloral.

Symptoms: Drowsiness, nausea, convulsions, and coma.

Treatment: Send for a doctor. Keep the patient awake by dashing cold water on the spine and chest, by keeping him moving, by administering strong coffee and other stimulants. It is desirable that the stomach should be emptied by an emetic. It is absolutely necessary that the patient be kept awake.

Anesthetics.

Poisoning may result from the use of ether or chloroform.

Symptoms: Insensibility and relaxation of all muscles.

Treatment: Remove the supply of ether or chloroform; send for a doctor; open the windows, and fan the patient.

Acids.

Acid poisoning is most often caused by the use of acetic, muriatic, nitric, oxalic, sulphuric, and tartaric acids.

Symptoms: Intense pain followed by shock. Nitric acid leaves yellow marks on the lips and tongue. Sulphuric acid leaves black marks on the lips and tongue.

Treatment: Send for a doctor; give an emetic after first giving a large quantity of warm water to dilute the poisonous material.

Mushroom Poisoning.

Symptoms: Colic, nausea, vomiting, diarrhea, difficult breathing, a weak, irregular pulse.

Treatment: Send for a doctor; give an emetic; give a dose of castor oil; apply heat to the stomach and to the feet.

Ptomaine.

Ptomaine poisoning is caused by spoiled food, most often by spoiled meat, fish, crabs, lobsters, and oysters.

Symptoms: Internal pain, vomiting, purging, faintness, thirst, and a cold, moist skin.

Treatment: Treatment is the same as for mushroom poisoning.

<u>Ivy Poisoning.</u>

Ivy poisoning differs from the above mentioned list of poisons in that it is external.

Symptoms: Small blisters in clusters, accompanied by acute itching and swelling.

Treatment: Cover the affected part with a paste of baking soda and water or paint it with a hot solution of potassium permanganate. If this treatment does not allay the symptoms go to a doctor.

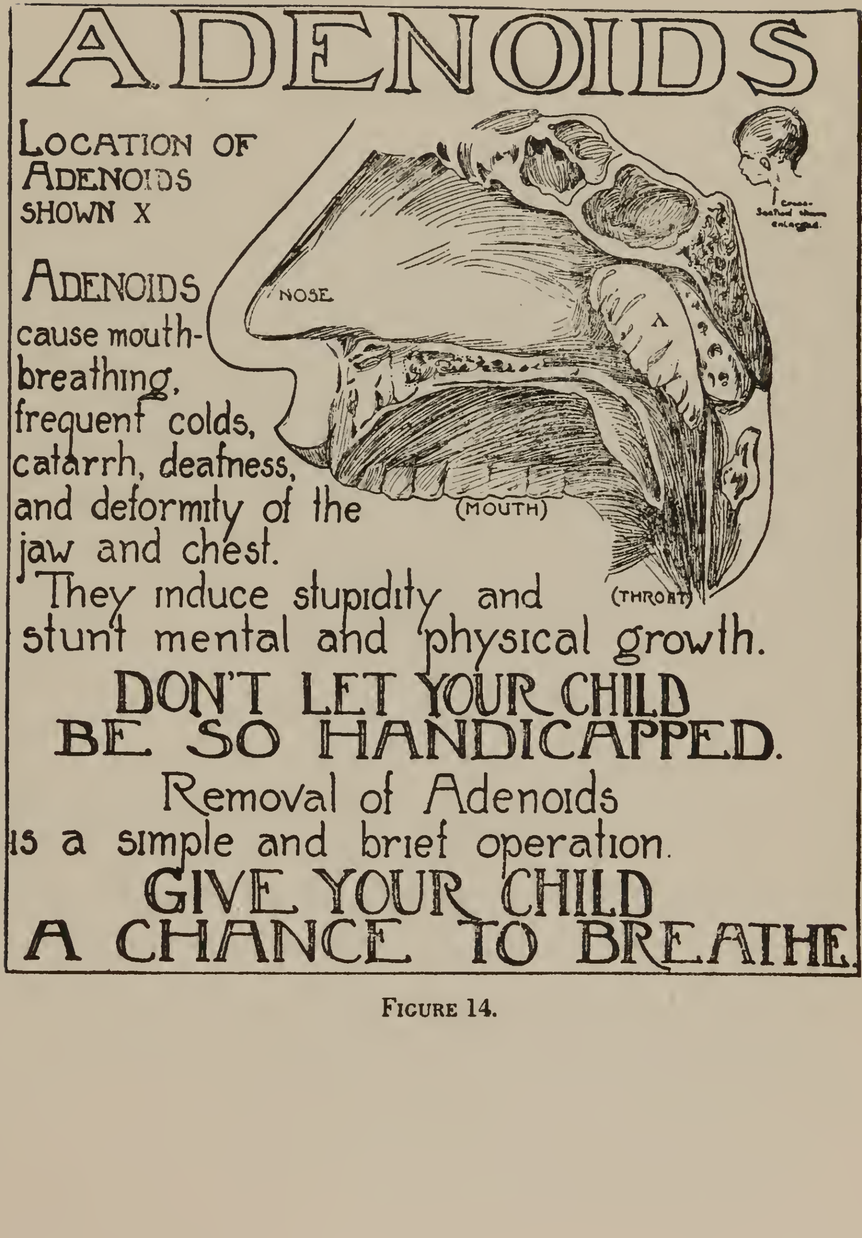
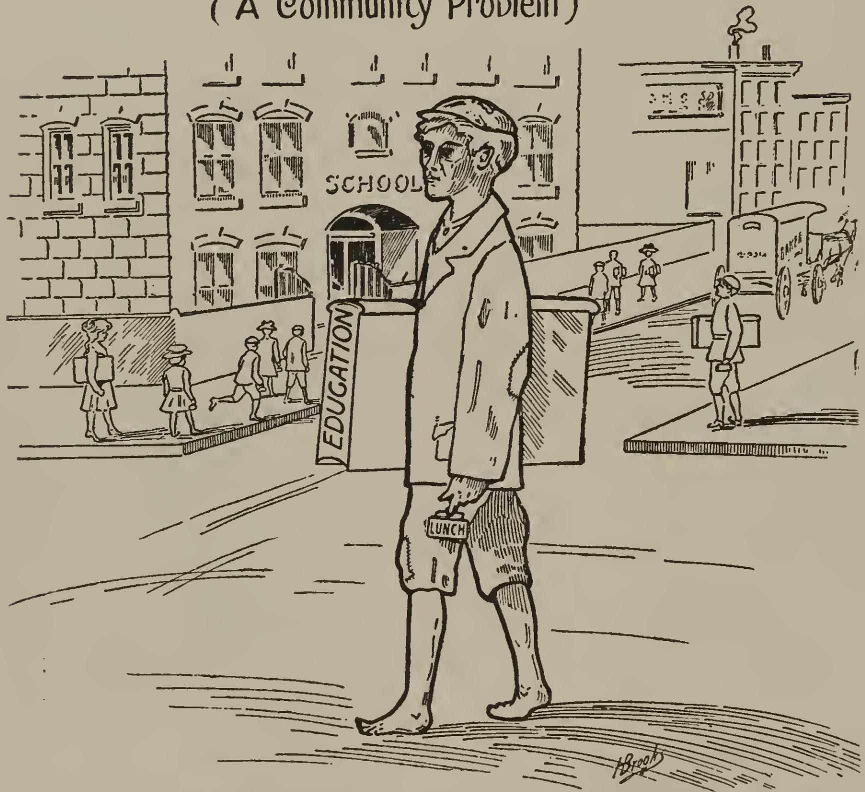

ADENOIDS
LOCATION OF ADENOIDS SHOWN X
NOSE
(MOUTH)
(THROAT)
ADENOIDS cause mouth-breathing, frequent colds, catarrh, deafness, and deformity of the jaw and chest.
They induce stupidity and stunt mental and physical growth.
DON'T LET YOUR CHILD BE SO HANDICAPPED.
Removal of Adenoids is a simple and brief operation.
GIVE YOUR CHILD A CHANCE TO BREATHE.

Figure 14.

EDUCATION VS NUTRITION

A Growing, Learning Child must be properly Nourished.

(A Community Problem)



HEALTH MUST NOT BE SACRIFICED TO EDUCATION

What will it profit a child, the man and a community if he gain a world knowledge and lose his health?

A wise community will safeguard its future well-being by recognizing its obligations to its child citizens.

There must be No Under-fed School Children.

FIGURE 15.

LESSON 12.

THE HUMAN BODY.

The human body may be likened to a stove which burns fuel. Burning fuel creates heat, which in turn liberates energy. The steam which drives the steam engine is produced by heat, and the energy which enables the human stove or machine to walk about, to think, to talk, is produced by burning fuel. We commonly call this fuel "food". Food is taken in at the mouth, where it is chewed by the teeth, and mixed with saliva. It is then swallowed into the stomach where it is partly divided up into small particles by the action of hydrochloric acid, pepsin, and rennin. The stomach then contracts and pushes it into the intestines, where it is again more finely divided and mixed with pancreatic juice and bile which convert a large part of it into a liquid substance known as chyle. This liquid is then absorbed through certain channels in the intestines, and finally reaches the blood, which carries it throughout the entire human machine.

Need of Air.

The human body needs air containing oxygen, just as an ordinary stove needs air containing oxygen in order that it may burn. The ordinary stove admits its air underneath the fire, but there is a stove on the market which takes its air through a grating at the very top. It is known as a hot-blast stove. The human stove or machine likewise takes its air in at the top through certain open-

ings which we call the nostrils or nose. The air is drawn down through the nose and other tubes into the lungs, where it passes through the thin walls of the air cells directly into the blood, which carries the oxygen from the air to every part of the human machine. The oxygen now has a chance to come in direct contact with the particles of the food which were eaten and absorbed into the system. It sets a slow fire in these particles of food, from which heat results. This heat it then applied to the mechanism of the human machine and produces what we call energy.

It has been stated, and well stated, that "In heat there is life, in cold there is death".

The human machine is made up of a number of small pieces called cells, fastened together with a cement-like substance so as to make complete parts. The energy liberated by burning with the oxygen which has been breathed into our systems is applied to these parts which work together systematically, just as do the different parts of an automobile; so we should look upon the human body as a mechanism which requires at all times a proper amount of food or fuel, and a proper amount of air containing oxygen to burn this food or fuel.

A small amount of draught will readily cause fine, dry shavings, or pine wood finely divided, to burn quickly. It takes a larger amount of draught and more care to set fire to hard coal and burn it. So it is with the human individual. The man who lives constantly in a house and does not get a large amount of fresh air must carefully

select his diet so that it may be digested and burned, whereas a man who has strenuous and hard labor outdoors can burn coarser food. The amount and quality of food that the farmer burns could not be handled safely by the city man with a sedentary occupation.

The nurse should always realize that man is an air animal; that he cannot live ten minutes without it; that air is just as essential for his existence as food; that in times of sickness, when the human mechanism is out of gear and perhaps the machine about to stop, the proper quality and quantity of air may bridge the patient over a crisis and thereby save a life; and that, when the fires are low, to shovel in large quantities of food or fuel is to completely extinguish the fire, or cause the death of the patient.

Formation and Disposal of Body Wastes.

The nurse should also realize that wherever fuel is burned there results not only heat, but also smoke. The smoke formed in the human body we call carbon dioxid. It is breathed out through the same channels through which the air is breathed in—the nostrils and the air tubes.

The nurse should also remember that whenever a fire is kindled we have ashes, as well as heat and smoke. The ashes that are formed in the human stove are finely divided and must be carried out through the blood vessels from the cells in which they were burned. In order to do this they must be mixed with fluid and, therefore, water is an essential substance and absolutely necessary when there is much fire in the human body.

The normal temperature of the blood is 98.8° F., but in times of fever the fires burn more briskly and the temperature may go to 102, 103, even to 107 and 108. The greater the fire the more fluids are necessary in order to furnish the proper amount of fluid to carry away the ashes that are caused by much burning.

Two organs in the human body are especially designed to take these ashes away from the fluid. These organs are called the kidneys. They are constantly at work, every second of the day and night, pulling out of the blood, so to speak, the little particles of ashes and sending them into little tubes, which tubes carry them to a larger tube, which in turn, carries them to the bladder.

This crude bird's-eye-view of the human body is presented to you as nurse students, not that it is in any manner complete, but simply to give you a little better perspective of the human body.

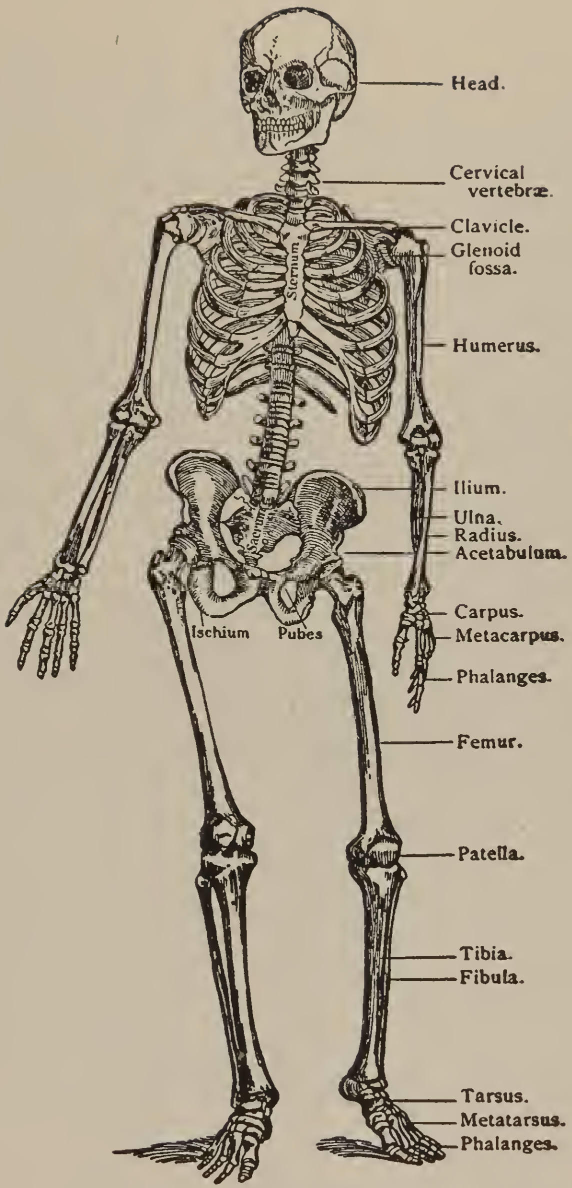


FIGURE 16—Skeleton.

From Gould's Illustrated Dictionary.
Courtesy of P. Blakiston's Son & Co.

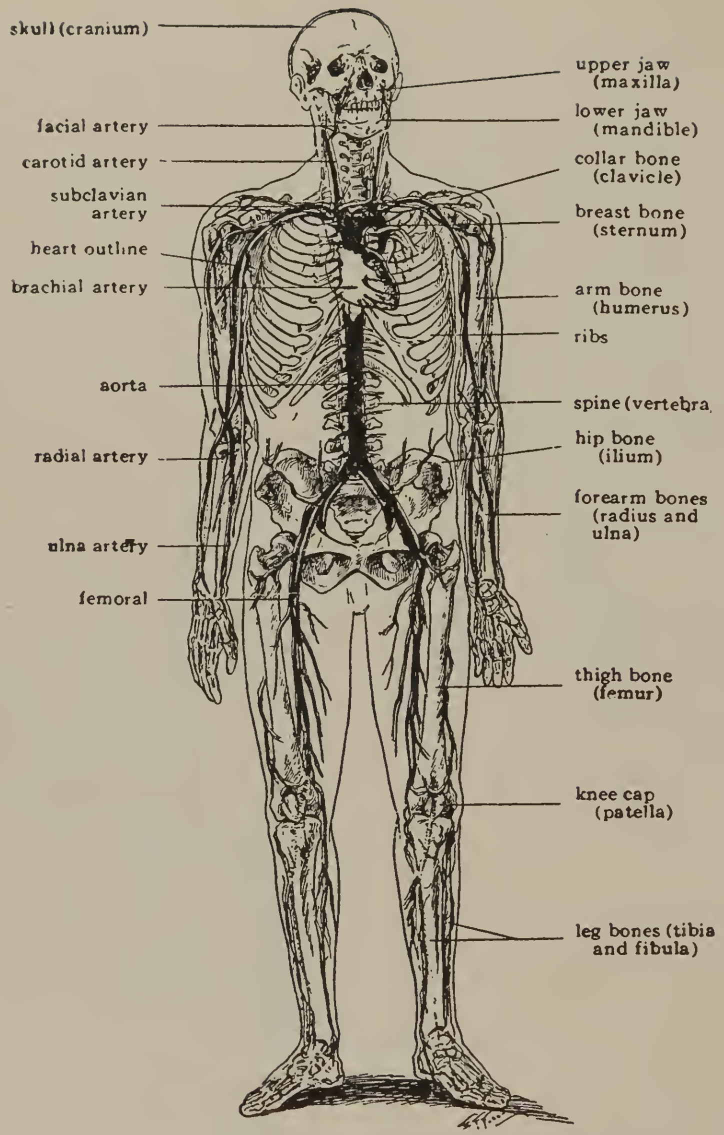


FIGURE 17.

Skeleton with Blood Vessel System.
Courtesy J. B. Lippincott Co.

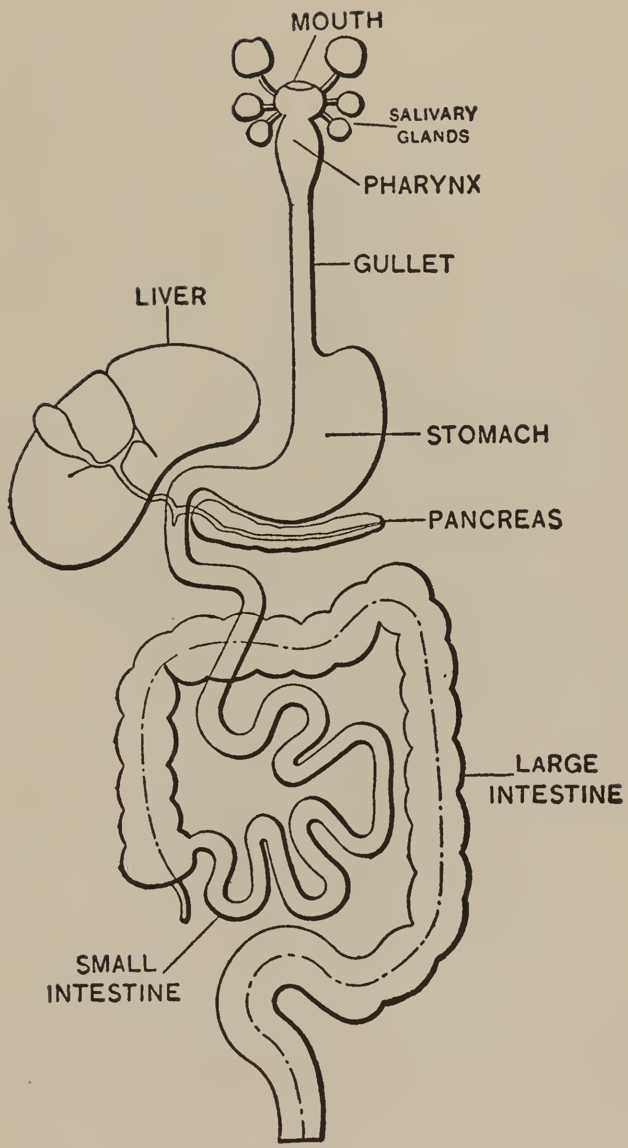
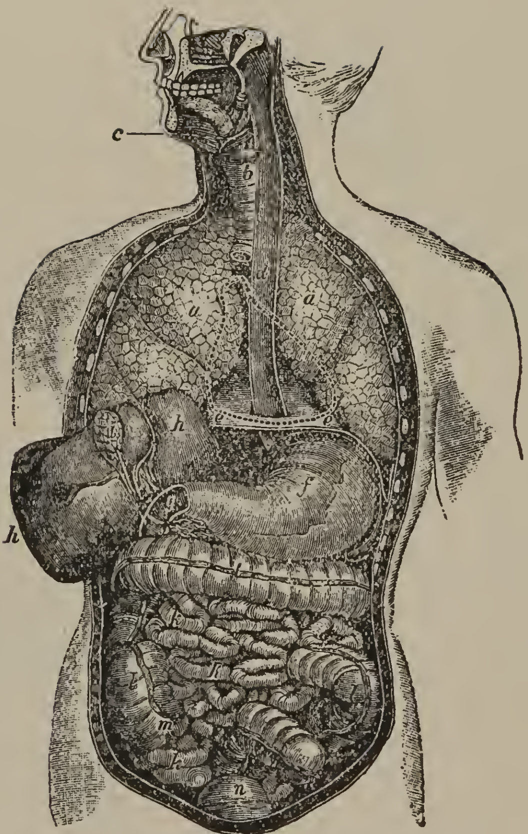


FIGURE 18.

Alimentary Canal. From Gray's Anatomy (DaCosta), 1905.
Courtesy of Lea and Febiger.



Thoracic and Abdominal Viscera in Man.

a. Lungs. *b*. Windpipe. *c*. Larynx. *d*. Æsophagus. *e*. Diaphragm. *f*. Stomach. *g*. Duodenum. *h*. Liver. *i*. Gall-bladder. *k*. Small Intestines. *l*. Large Intestines. *m*. Cæcum. *n*. Urinary Bladder. The dotted line shows the outline of the Heart, which is not shown for the sake of clearness.

FIGURE 19.

LESSON 13.

ANATOMY AND PHYSIOLOGY.

There are 206 bones in the human body. United in several ways, they provide a strong framework, which supports the body and forms levers upon which the muscles can act. The skeleton also serves as a support for the organs of the body, and in some places, as the skull, thorax, and pelvis, makes strong boxes or cages, in which delicate organs, such as the brain, lungs, and reproductive organs, lie safely protected.

The skull is made up of 29 bones; those behind and above arranged to form the brain box, and those in front to support the face.

Bones of the head:
1 Occipital (Back of head).
2 Frontal (Front of head).
2 Parietal (Sides of head).
2 Temporal (Temporal regions).
1 Sphenoid (Back of ear).
1 Ethmoid (Roof of nose).

Bones of the face:
2 Nasal (On roof and sides of nose).
2 Lachrymal (Between nose & eye sockets).
2 Malar (Supporting the cheek and below and outside the eye).
2 Palate (Supporting part of the roof of the mouth).
2 Superior Maxillary (Upper jaw).
1 Inferior Maxillary (Lower jaw).
1 Vomer (Between the nostrils).
2 Turbinated (Inside the nose).

The vertebral column is made up of irregular bones piled one upon another and each called a vertebra, arranged from abov. downward, as follows.

7 Cervical
12 Dorsal
5 Lumbar
1 Sacrum
1 Coccyx

<u>The ribs</u> are 24 slender curved bones, 12 on each side of the chest. Each rib is attached behind to a vertebra and in front to the sternum, or breast-bone.

<u>The thoracic cavity,</u> which contains the respiratory organs whose function it is to introduce oxygen into the blood and eliminate the carbon dioxide from the body, is formed by the vertebra of the back, by the ribs at the sides, and by the sternum in front. The organs of respiration are: the lungs, into which the air is introduced through the trachea and the bronchial tubes. The diaphragm is a muscular sheet separating the thoracic from the abdominal cavity. By contracting and expanding it helps to give a bellows effect to the action of the chest wall during respiration.

<u>The abdominal cavity</u> contains the organs of digestion and elimination, such as the stomach, liver, kidneys, pancreas, spleen, and intestines. The intestine is devided as follows:

Small intestine	(Duodenum (Jejunum (Ileum
Large intestine	(Ascending Transverse and (Descending Colon (Rectum (Anus

<u>The pelvic cavity,</u> formed by the os innominata, sacrum, and the coccyx bones, contains the bladder, rectum and reproductive organs. In the female, the vagina, uterus, Fallopian tubes and ovaries are coontained in the pelvis and in the male the prostate gland and the seminal vesicles.

<u>The digestive system</u> consists of the mouth, tongue, pharynx, esophagus, stomach, intestines and the glands that

secrete the digestive fluids. These glands are as follows:

Salivary Glands:

Parotid
Sublingual
Submaxillary

Liver

Pancreas

Digestion is the process by which the food, introduced into the body, is liquified and its nutritive principles changed by digestive fluids into such a condition that it is capable of being absorbed into the blood. The food is taken into the mouth, masticated by the teeth and mixed with the saliva, whose active principle is ptyalin, which converts starch into sugar. It is then formed into a bolus or ball, by the tongue, grasped by the constrictor muscle of the pharynx, and rapidly forced down the esophagus and into the stomach. Here it mixes with the gastric juice, whose active principles are hydrochloric acid, pepsin and rennin. The hydrochloric acid provides the acid medium necessary for the gastric ferments to act in. The pepsin converts proteins into soluble peptones; the rennin coagulates the casein in milk, converting it into solid curds, which are then digested as other protein food. Fats are melted and set free, but not otherwise acted on in the stomach.

Food leaves the stomach in the form of a thick milky fluid, known as chyme, and passes into the douodenum, which is the first part of the small intestine. Here it mixes with the pancreatic juice, the active principles of which are trypsin, which completes the digestion of proteins; steapsin,

which emulsifies and splits the fats into fatty acids and glycerine and amylopsin, which complete the conversion of the starches into sugar.

The food passes from the small to the large intestine, which acts as a reservoir, from which the remainder of the foodstuffs and water are absorbed. What is not absorbed passes out of the body as waste matter.

The Bile. The bile excreted by the liver contains certain salts, which act on the fats, emulsifying them and splitting them up into fatty acids and glycerine, in which form they can be absorbed. Bile also prevents putrefaction.

When the food is ready for absorption, it is a milky fluid called chyle. In this form it is absorbed by the lacteals and is taken by the thoracic duct to the left subclavian vein, where it enters the general circulation. Some of the nutritent material is absorbed by the blood vessels in the mucous membrane of the intestine, and then carried by the portal vein to the liver, thence to the vena cava, and finally distributed through the whole arterial system.

The circulatory system is composed of the heart and the blood vessels. Arteries are the blood vessels which carry the blood from the heart to the tissues. The veins return the blood to the heart, and the capillaries are the fine network of minute vessels through which the blood flows to the tissues in passing from the arteries to the veins. The blood is a nutritive fluid composed of a transparent colorless liquid, called plasma, in which float red and white corpuscles. The function of the red corpuscle is to absorb

and carry oxygen to the tissues and to carry carbon dioxide back to the lungs. The white corpuscles, also called leukocytes, act as the protectors to the body in destroying harmful substances that gain admission to the system. They are capable of changing form and place, and readily pass through the walls of the capillaries.

The plasma of the blood consists chiefly of water, which holds in solution protein substances and certain mineral salts. It carries nutritive material to the tissues.

The lymph. The blood-plasma soaks through the thin walls of the capillaries and passes out among the body cells where it is known as lymph.

The function of the lymph is to carry food and oxygen from the blood and pass them on to the cells, and to receive the waste from the cells and carry it back to the blood.

The heart is a hollow muscular organ, pear shaped, about the size of the person's fist. It is placed in a slanting position between the lungs, in the thoracic cavity.

Its base is directed upward, backward, and slightly to the right; its apex is downward, pointing to the left. It is lined by a serous membrane called endocardium and surrounded by the pericardium. It is divided into four cavities, the right and left auricles, and the right and left ventricles.

The circulation of the bloood in the body is as follows: The blood from all parts of the body, loaded with impurities, enters the right auricle by the ascending and descending vena cavas. By the contraction of the auricle the blood is

forced through the opening guarded by the tricuspid valve and into the right ventricle. This chamber contracts and forces the blood through the opening guarded by the semilunar valve into the pulmonary arteries, which carry it to the lungs to be purified. It returns to the left auricle by the pulmonary veins and is then forced through the opening guarded by the bicuspid or mitral valve into the left ventricle. This chamber contracts and forces the blood through the opening guarded by the semilunar valve into the aorta, which carries it to all parts of the body.

The arteries have three coats forming a strong elastic wall. Leaving the heart, the arteries divide into two branches and these divide and subdivide into smaller vessels, until they finally give rise to the capillaries, the smallest blood vessels.

The capillaries are such tiny tubes that they cannot be seen without a microscope. It is while flowing through them that the blood does its work. It flows very slowly; the plasma soaks through their thin walls, furnishing new food to the tissue cells and taking up much of the waste matter, which these cells have excreted.

The veins are similar in structure to the arteries, but the walls are thinner. Most veins are povided with valves, which allow the blood to flow freely toward the heart. They carry the impure blood, which is dark in color.

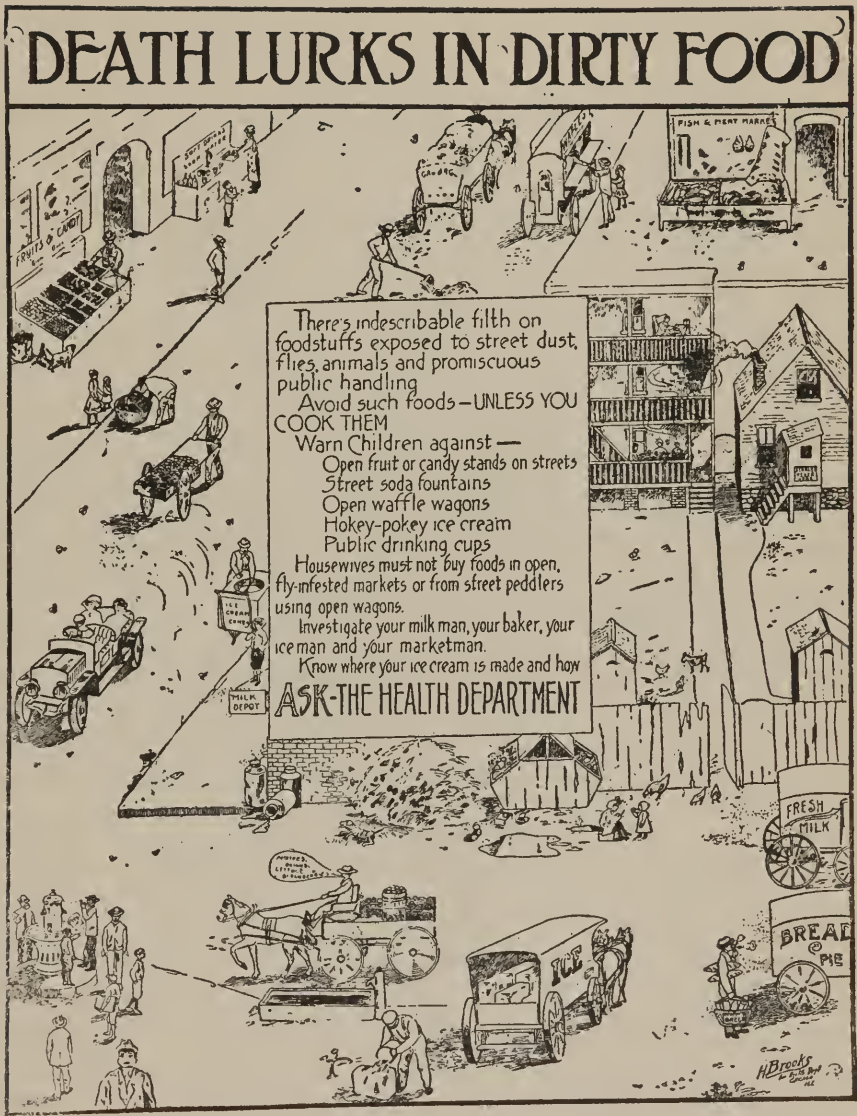

DEATH LURKS IN DIRTY FOOD
There's indescribable filth on foodstuffs exposed to street dust, flies, animals and promiscuous public handling
Avoid such foods — UNLESS YOU COOK THEM
Warn Children against —
Open fruit or candy stands on streets
Street soda fountains
Open waffle wagons
Hokey-pokey ice cream
Public drinking cups
Housewives must not buy foods in open, fly-infested markets or from street peddlers using open wagons.
Investigate your milk man, your baker, your ice man and your marketman.
Know where your ice cream is made and how
ASK-THE HEALTH DEPARTMENT
FRUITS & CANDY
FISH & MEAT MARKET
MILK DEPOT
FRESH MILK
BREAD
PIE
ICE
H.Brooks

Figure 20.

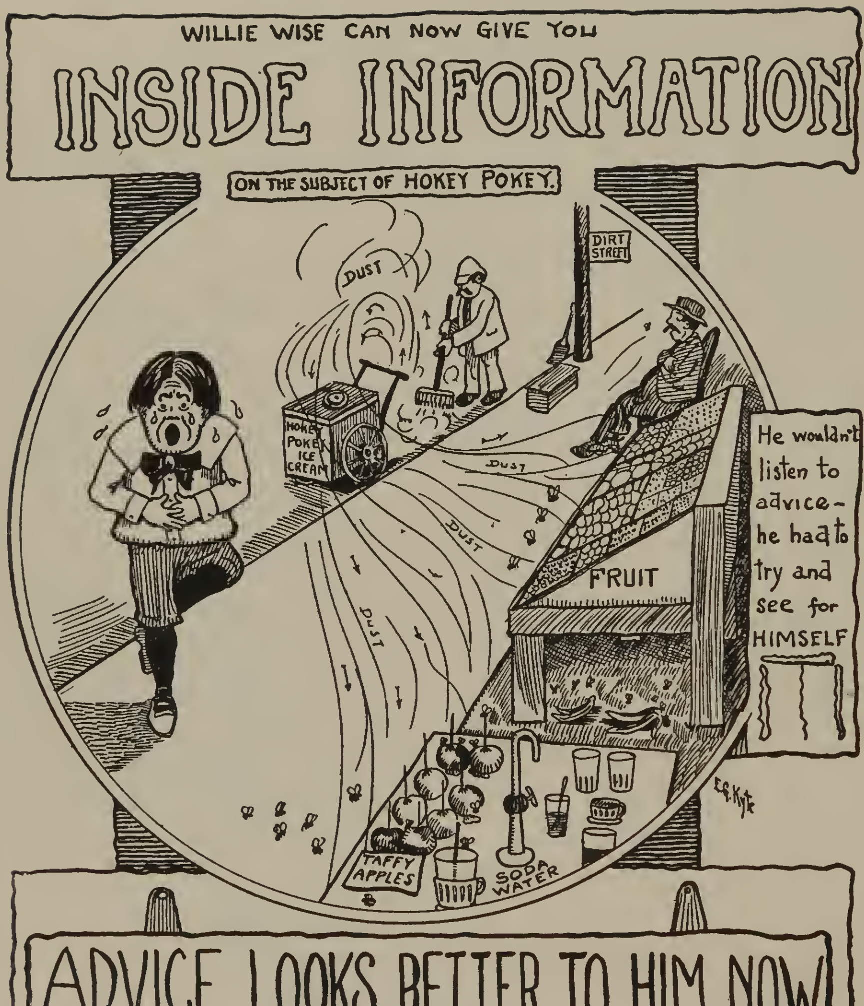

WILLIE WISE CAN NOW GIVE YOU
INSIDE INFORMATION
ON THE SUBJECT OF HOKEY POKEY.
DIRT STREET
DUST
HOKEY POKEY ICE CREAM
DUST
DUST
DUST
FRUIT
He wouldn't listen to advice - he had to try and see for HIMSELF
TAFFY APPLES
SODA WATER
E.G. Kyte
ADVICE LOOKS BETTER TO HIM NOW
Chicago Health Department Educational Poster No. 229.

FIGURE 21.

LESSON 14.

FOOD.

A food is anything which, when taken into the body, is capable of building or repairing tissues, or of supplying heat and energy.

The body is made up of a number of chemical elements, of which the most important are: Oxygen, hydrogen, carbon, nitrogen, sulphur, iron, phosphorous, magnesium, calcium, potassium, and sodium. All of these substances must be supplied to the body by the food which we eat, the water we drink and the air which we breathe. These elements must be kept in their proper proportions if health is to be maintained.

There are in the body, in addition to these chemical elements, certain substances that are little understood, but that are absolutely necessary to health and growth. They are known as vitamines.

Vitamines are known to be abundant in milk, butter, and fresh vegetables, especially tomatoes. It is for this reason that these foods form staples of our diet and that substitutes for them are not satisfactory. As a general rule, vitamines are destroyed by cooking.

Foods are usually classified as proteins, carbohydrates, fats, mineral salts, and water.

Proteins.

Proteins repair and build tissues. They are of both animal and vegetable origin. The common animal foods containing large quantities of proteins are: Meat, fish, eggs,

milk and cheese. Foods containing vegetable proteins are peas, beans and lentils. Wheat, oats and barley also are rich in proteins.

Animal foods are richer in protein than the vegetable foods. They are of high nutritive value and are digested with very little residue. This is the reason why eggs and milk are the two foods that are most often given to children, invalids, and elderly people.

The vegetable proteins are of similar composition to animal proteins but some are less easily assimilated. All proteins contain sulphur. Gluten from wheat is the most important cereal protein ,and for this reason gluten bread figures largely in the diet of persons suffering from diabetes.

Carbohydrates.

The carbohydrates include all starches and sugars. The most important, common carbohydrates are cane sugar, molasses, candy, maple sugar, glucose, milk sugar, beet sugar, grape sugar and all starches. Potatoes, beets, parsnips, cereals, rice, hominy, cornmeal and flour contain large quantities of carbohydrates.

Fats.

Fats are the most concentrated foods we have. They are secured from both animal and vegetable sources. The most common foods containing large quantities of animal fats are: Cream, butter, meat fat, cheese, lard and oleomargine. The most common vegetable fats are: Olive oil, cotton-seed oil, maize or corn oil, cocoanut oil, peanut oil, cocoa butter. All nuts contain large quantities of fat.

Because the fats are concentrated foods one must be moderate in their use.

Mineral Salts.

Mineral salts are absolutely necessary for repairing and building bone and tissue. About 5 per cent. of the weight of the body is mineral salts, five-sixths of which are found in the teeth and bones. The most common of these mineral salts are combinations of calcium.

Sodium Chlorid.

About 60 per cent. of the mineral salts contained in the blood is sodium chlorid, or common salt.

Calcium.

Calcium is found in milk, eggs, rice, asparagus, spinach, and other vegetables and natural waters.

Phosphorus.

Phosphorus is found in the nuclei of all cells. It is present in milk, eggs, fish, meat, fowl, and cereals.

Potassium.

Small amounts of potassium are needed for the muscles and tissues. It is found mainly in green vegetables and mineral waters.

Iron.

Iron is needed for the red blood cells. Iron is found in red meats, eggs, oatmeal, wheat, spinach, potatoes, peas, beans, beets, lettuce, apples and bread. It is particularly plentiful in spinach, beet tops, lettuce, dandelion leaves, and other "greens." The older generations fed their families "greens" in the springtime because they "were good for the blood.'' The reason they are good for the blood is because

they contain so much iron and mineral salts. People whose blood does not contain enough iron should eat plentifully of these foods instead of taking tincture of iron or any of the patent medicines advertised as containing iron. People whose blood is deficient in iron should eat abundantly of these vegetables instead of taking tincture of iron.

Sulphur.

Sulphur is found in eggs, milk, corn, turnips, cauliflower, asparagus, and other vegetables.

Water.

Water is composed of hydrogen and oxygen. It forms about 60 per cent. of the human body. It is derived from drinking water, beverages, soups, milk, meats, fruits and vegetables. If given enough oxygen, water and heat, we can live for several weeks without food. Cases have been known where persons lived as long as forty days without food.

Water is necessary in the body to distribute nutriment and carry off waste products; to aid secretion; to distribute the body heat; to furnish fluidity to the blood and other fluids of the body and to dilute the poisonous products of oxidation. A person in normal health should drink about three pints of water per day.

It is part of the duties of the home nurse to see that the well are fed such foods as will tend to keep them in good health. To do this she must know not only which foods contain vitamines, and which foods are rich in proteins, carbohydrates, fats, and mineral salts, but the heat value of such foods expressed in calories.

A calory is a unit of measure of heat. We say food has a value of 100 calories if its use as fuel for the human "stove" will produce 100 calories of body heat.

The number of calories that an individual person needs daily, in a given climate, depends largely upon age and occupation. A baby a year old needs from 400 to 600 calories per day. A pint of milk, if properly digested, will create about 200 calories of heat, and a slice of toast, an egg, a small slice of fried bacon, a medium-sized baked potato, a large apple, or an orange will each produce about 100 calories of heat.

A clerk will not require so much food nor so rich food as the lumberjack. One may be kept in good health by food that will produce 2100 calories of heat per day, while the other may require food that will produce 3200 calories, or even more.

The amount of food needed depends not only on the sort of work a man does, but also upon his age and weight, and upon the season. More food is required in the winter-time.

The nurse must remember, however, that it is not sufficient merely to feed the lumberjack such food as will produce 3200 calories of heat per day. There must be a proper balance between proteins and carbohydrates.

In determining this balance, the nurse must take into account the age, general health, etc., of the person as well as the season of the year. Children require a greater proportion of proteins than adults and all persons require more proteins in the winter than in the summer.

LESSON 15.

FOOD FOR THE SICK.

Diet is of more importance in the treatment of most diseases than medicine. Determining the diet is, therefore, entirely a matter for the doctor. The nurse will have charge, however, of preparing the food, and serving it.

When preparing food the nurse should be careful that all utensils used in cooking are perfectly clean, and that the food used is of good quality.

The nurse must remember, also, that the best foods may be ruined by incorrect cooking. Starchy foods are not easily digested unless the starch grains are exploded in cooking. The reason, therefore, why cornmeal, cornstarch, oatmeal, flour, etc., is stirred into boiling liquid when we are cooking it is because the intense heat explodes the tiny starch grains. It is stirred in slowly in order that the heat of the liquid may not be lowered by the sudden addition of a quantity of cold meal or starch or flour. This is the reason, also, why potatoes should be put into boiling water when cooking them, for potatoes contain a high percentage of starch.

Meats should be well cooked. This is especially true of pork. The larval stage of certain worms are found in the muscles of certain animals. The worm known as trichina is frequently found in hogs. If pork is sufficiently cooked, the larvae are killed; otherwise they enter the body of man alive, and grow and develop in his intestines and from there

enter the muscles. Their presence in any great numbers causes serious disease. The larvae of the tapeworm also are found in the muscles of many animals. When meat that contains these larvae is not sufficiently cooked, they enter the body alive, and develop in the intestines of their host. They consume much of the food that their host eats, and it is sometimes characteristic of people who have a tapeworm that they are always hungry and that they are unable to eat enough to satisfy their appetite but this is not always the case. The tapeworm is most often taken into the body in insufficiently cooked beef.

Serving Food to the Sick.

The patient's hands and face should be wiped with a damp cloth before he is given food. His position in bed should be made as comfortable as possible. His mouth should be kept clean. It should be rinsed both before eating and after eating with a mouth-wash. If the mouth is dry, it should be moistened from time to time with a little glycerine water, and lemon juice. If the patient is helpless, the mouth may be cleaned out with cotton fastened around an orange wood stick, or wound around the finger.

If the patient is helpless, care should be taken in giving food, giving it slowly and seeing that each mouthful is swallowed before another is given.

When feeding an unconscious patient, the nurse must be careful not to choke him. She should open the mouth by pressing the chin downward. She should then place food far back in the mouth, and press the tongue down gently with

the spoon. As a rule, the patient will swallow. If not, it will probably be necessary to administer his food by enema.

The nurse should try to tempt the patient's appetite with variety, dainty service, and small surprises, sufficiently to get him to eat the amount of food that the doctor says he should take. Until the doctor has seen the patient and has diagnosed his disease it is very unwise to urge the patient to eat, or to try to tempt him to eat. Frequently the stomach needs a rest more than it needs anything else. This is particularly true in the case of children. Going without food for a day or two is less dangerous than overloading a tired stomach. People have been known to live forty days without food, consequently the mother whose child has a cold and doesn't want to eat, need not worry for fear he will starve to death if he misses a meal or two.

The doctor will direct the diet, but the nurse will usually have to decide just what is to be served at each meal. Generally speaking, it is better to serve a little of several things rather than a quantity of one thing.

It is particularly important that the patient should be kept as cheerful as possible while he is eating; for worry, anxiety, fear or temper always interfere with digestion.

Hot food should be served very hot, and cold foods should be served cold. Liquid should be given from a

feeding cup, a glass tube, or a small wide-mouthed jug. The tray should be as daintily arranged as possible and the dishes should be the best in the house. It is well for the nurse to clip jokes or quotations that she thinks would amuse or interest the patient from magazines or newspapers, and read them to the patient while he is eating, in order to keep the patient's thoughts as much as possible from himself.

The patient should be offered water frequently, whether he asks for it or not. Not infrequently a patient hesitates to ask for a drink as often as he wants one for fear he will be thought bothersome. The system of a person in good health requires about three pints of liquid a day to keep the organs of excretion working properly. A sick person requires at least as much and in case of diseases accompanied by fever he requires more.

Diet for Colds, Tonsillitis, Chickenpox, Measles, Ptomaine Poisoning, etc.

In these diseases the heart and kidneys must be saved from any extra strain. The diet that will best accomplish this result is one of fluids. The quantity of fluid given at a meal should be small, and the intervals between meals should be short, usually about two hours, until the fever that always attends these diseases has decreased.

The following foods constitute a fluid diet and give enough variety to choose from, so that the patient need not be given the same thing over and over.

Whole milk, peptonized milk, albumenized milk,

buttermilk, koumiss, malted milk, milk shake, milk punch, cream, whey, fruit beverages,—either plain, albumenized, or mixed with raw eggs, egg nog, milk and ginger-ale, cocoa, strained gruels, plain broth, and broths with egg.

The following schedule for one day's feeding may be useful as a guide:

7 A. M.	6 ounces (about one cupful) of hot milk or cocoa.
9 A. M.	6 ounces of broth, re-enforced with egg.
11 A. M.	A milk shake.
1 P. M.	4 ounces oatmeal gruel and 2 ounces of cream.
3 P. M.	Albumenized orange juice (4 ounces) and white of 1 egg.
5 P. M.	6 ounces broth, re-enforced with white of egg.
7 P. M.	6 ounces of cocoa.
9 P. M.	6 ounces of malted milk.
12 P. M.	4 ounces of hot milk and two ounces of cream.
4 A. M.	4 ounces of hot milk and two ounces of cream.

The night feedings may be omitted, if the patient is asleep.

After the temperature becomes normal the following foods may be added to the diet: Cream soup; soft-boiled, coddled, or poached eggs; soft or baked custard; junket; cocoa; plain ice cream; milk or cream; buttered toast; cereals; gelatine; jellies; fruit; meat jellies; baked potatoes; apple sauce; baked apple; fruit whip; blanc mange; broiled lamp chops; chicken; sweetbreads.

The following schedule for one day may be used as a guide:

7:30 A. M.	3 ounces of cream of wheat and 1 ounce of cream.
	1 soft-boiled egg.
	1 slice of buttered toast.
	6 ounces of cocoa, milk or coffee.
	2 tablespoonfuls of strained prune pulp with 2 ounces of cream.
10:30 A. M.	Albumenized orange juice.
	White of egg beaten light and 5 ounces of orange juice added.
12:30 P. M.	Cream of tomato soup, 6 ounces.
	1 baked potato with butter.
	1 slice of buttered toast.
	1 cup cocoa, milk or buttermilk, tea or coffee.
3:30 P. M.	1 glass of milk.
6:00 P. M.	2 slices of buttered toast, moistened with 4 ounces of milk and 2 ounces of cream.
	1 soft cooked egg, or 3 tablespoons of well cooked cereal.
	2 tablespoonfuls of boiled rice.
	2 tablespoonfuls of apple sauce, served with 1 tablespoonful of cream.
	1 cup of cocoa, malted milk, whole milk, tea or coffee.
9:00 P. M.	4 ounces of milk with 2 ounces of cream.
	1 cup of cocoa, or malted milk.

Diet in Typhoid Fever and Scarlet Fever.

The treatment for these diseases consists almost entirely in proper feeding and good nursing care. The kidneys are under a great strain in acute infectious diseases, especially in scarlet fever, and a poorly selected diet may overwork them and cause development of nephritic conditions. A diet that may be suited to one typhoid case may disagree violently with another. Determining the diet is, therefore, entirely a matter for the doctor, and the nurse should not risk making the slightest change in the diet that he orders. So slight a thing as a bit of fruit, or a bite of meat, even contrary to doctor's orders, has been known to cause the death of a typhoid patient. Particular care must be taken during the period of convalescence, and the nurse must remember that the patient's appetite is absolutely no guide as to what he ought to have.

The chief guide in the diet for typhoid is found in the condition of the stools. The doctor in charge of the case should see the bowel discharges every day.

Diet in Diabetes.

In diabetes, sugars are not fully utilized by the body, and are excreted in the urine in the form of glucose. The treatment of the disease is wholly by means of diet and hygiene. The patient's urine should be frequently examined by the doctor, as it is the guide in determining a diet that will agree with the individual case. In this disease a diet that agrees with one patient may be very injurious to another. It is particularly necessary that the

diet ordered by the doctor should be intelligently prepared by the cook. The two things that must not be included in the diet of a patient suffering from diabetes, are starches and sugar. Consquently the patient must avoid sugar, syrup of all kinds, beets, potatoes, peas, parsnips, carrots, beans, arrow-root, sago, tapioca, oatmeal, barley, sweet fruits, chocolates, cider, malt, liquors, champagne, and sparkling or sweet wines.

The patient is allowed to have meats of all kinds, fish, poultry, game, eggs, cheese, butter, cream, lettuce, celery, cucumbers, watercress, dandelions, young onions, cabbage, cauliflower, spinach, beet tops, string beans, artichokes, mushrooms, almonds, walnuts, sour oranges, cocoanut, grape fruit, alkaline waters, and gluten bread.

Diet in Tuberculosis.

The nurse must be certain that the patient suffering from tuberculosis receives sufficient food. If the patient's digestion is good, he should be fed a very nutritive diet, including meat, milk, eggs, cream, fats, and oils.

In many cases of tuberculosis the patient suffers from digestive troubles. Such patients should be warned against swallowing the sputum, for doing so is likely to cause intestinal tuberculosis.

The patient should take two or three quarts of milk a day if possible. He should always take at least one glass of milk at meal times and another at bed time. In addition to milk the tuberculosis patient should take as much butter, cream, fat bacon, olive oil, and cod liver oil as he can digest.

Diet for Nausea and Vomiting.

In all cases of persistent vomiting the doctor should outline the diet. Usually well nourished patients who suffer from vomiting, should refrain from eating any food for ten or twelve hours. As a rule the patient should be given cold food.

The following foods are often prescribed for patients suffering from nausea: Cracked ice, pancreatized milk, milk and lime water, seltzer water, koumiss, whey, matzoon, beef extracts, scraped raw meat, strong black coffee, sour lemonade, and clam broth.

In very severe cases it may be necessary to feed the patient by means of enemata. In mild cases it is usually well for the patient to eat little except dry crackers, or dry toast, for a day or so.

Diet for Constipation.

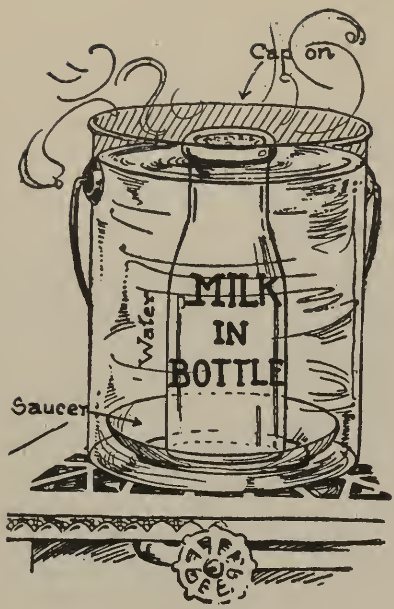
In cases of chronic constipation the doctor should outline the diet. Generally speaking, however, people with a tendency to constipation should eat bulky foods rather than concentrated foods. Vegetables are bulky foods; nuts, chocolate, sugar, cornstarch, cake, pastry, etc., are concentrated foods. Rhubarb is particularly useful in the diet because of the bulk of vegetable fiber that it contains.

Another class of foods is useful in that they irritate the walls of the intestines and cause a more plentiful flow of the digestive juices. Such foods are bran, oatmeal, whole wheat products; figs and other fruits that contain many small seeds. Stewed prunes, orange juice, lemon juice, grapefruit, etc., have a laxative effect.


PROTECT YOUR BABY FROM FLIES
FLIES FOR FILTH AND FEVER
SCREENS FOR CLEANLINESS AND HEALTH
BABY'S MILK
BABY'S DIAPERS
CONSUMPTIVE SPITTOON
GARBAGE
SCARLET FEVER HERE
Why call it —
"Summer Complaint?"
Why not call it —
"Fly Complaint?"
The filth bearing fly infects the baby's food; the infected food causes bowel trouble.
To avoid "Fly Complaint"
Screen the baby.
Protect its food.
DIAPERS IN COVERED CAN
PURE MILK
BOTTLED MILK ONLY
FLY SWATTER
HOME MADE ICE BOX FOR BABY'S FOOD
HOME PASTEURIZED MILK
Brooks

FIGURE 22.

HOME PASTEURIZATION OF MILK



The following method carefully employed will destroy disease-producing bacterial life in milk without affecting the food value of the product:

In a small tin pail place a saucer; on the saucer stand the bottle of milk (leaving the cap on the bottle). Now pour sufficient hot water (not so hot as to break the bottle) into the pail to fill same to within three or four inches of top of bottle and then stand the pail and its contents on the stove. The instant the water begins to boil remove the bottle of milk from the pail and cool it as rapidly as possible.

Keep the bottle of milk in the icebox and keep the cap on the bottle when not in use. When you remove the cap do so with a clean fork prong and be careful that the milk side of the cap does not come in contact with anything dirty.

FIGURE 23.

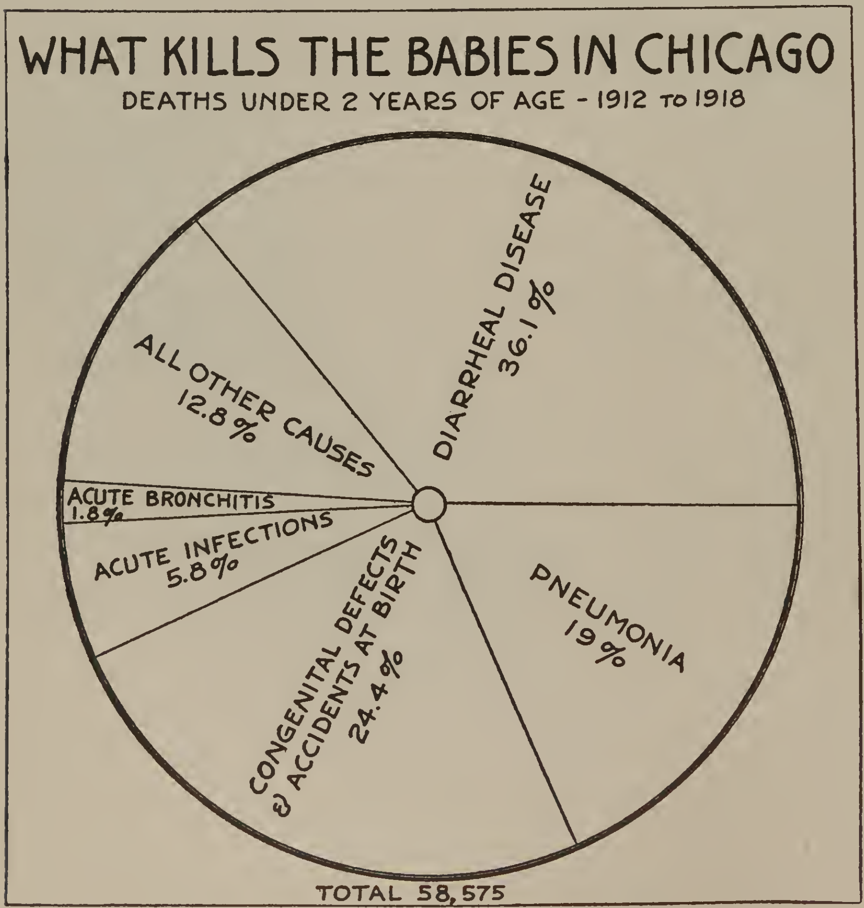


FIGURE 24.

LESSON 16.

THE SANITATION OF THE HOME.

The terms sanitary and sanitation are much abused. They have their origin in the Latin word "sanitas," meaning sound or complete, wholesome or healthy. We say "a sound apple," meaning one that is not decayed but is complete and wholesome. These terms, therefore, when applied to the home, mean wholesome, clean and well kept, that is, normal, fit for normal growth and development. In the last analysis sanitation of the home amounts to little else than good housekeeping. "The first law of sanitation is quick removal of all wastes," and "The first requisite for cleanness is light,-direct sunlight, if possible."

Essentials.

There are certain fundamentals of civilized life which can only be supplied to man by his surroundings. Three of these fundamentals, as catalogued by the ancient philosophers, are (and you will recognize them at once as necessities):

1. Air for breathing.
2. Water for drinking and washing.
3. Food for nourishment.

To this list the sanitarian of the present day rightly adds four others:

4. Clothes, and a House for shelter. Living in a climate where the temperature sometimes falls to zero we require adequate clothing for the protection of

our bodies, and a house also to shelter us. Someone has called the house, "The outer garment of the man," implying that it serves the same kind of purpose as does clothing.

5. Light for physical development.

Doubtless all of you have seen the potato sprout grown in the cellar, which is absolutely devoid of the green coloring natural to vegetation. So with human beings who live in the dark. It is a well recognized fact that the distinctive red cheek of health cannot be found unless one lives in natural light and has fresh air.

6. A degree of Freedom from Noise.

People vary greatly in nervous temperament. While occasionally one may be found who can accustom himself to working in the din of a boiler shop, many sensitive people are driven almost distracted by the ordinary noises to which we are subject in a great city. More than we realize are we made uncomfortable by lack of reasonable quiet. In the past few years we have learned that many noises of the city, such as the blowing of locomotive whistles, the tremendous rattle of the street and elevated car, have a disturbing effect upon normal conditions of development.

7. A suitable Mental Stimulus.

We often read in the paper that someone desiring to drown himself has been prevented from jumping into the lake. We know that some high office buildings have found it necessary to put screens in their interior courts in order to prevent the sacrifice of life of those who felt an uncontrolled desire to jump over the railing. Not all of us are

so distracted as to wish to commit suicide, but we know full well that unless a worker feels that his efforts are worth while, and goes about his daily task with certainty that life is worth living, health and strength are affected. We may well classify a normal mind as an important factor in health and well being.

Things Which Affect the Home.

If the house or the housekeeping fouls the air we breathe, or the water we drink, or the food we eat, it is not a suitable home. If the house, likewise, does not afford adequate shelter from dampness, and a sufficient degree of light, it is not a proper home. The things which affect the home are:

I. The things we ought to get rid of.

II. The things we ought to bring in.

III. The things we ought to keep out.

I. Things we ought to get rid of may be divided into six classes, most of which consist of various kinds of waste materials:

1. Sewage, that is, the liquid wastes which are produced in our houses. The clean water which comes into our homes is quickly fouled, and becomes a waste of which we should promptly rid ourselves.

2. Food wastes, such as we ordinarily call garbage.

It should be noted that these in general are not dangerous, but only offensive and unclean. They should be kept covered to exclude flies, be as dry as practicable, and removed outside of the house, and, indeed, away from

the premises as promptly as conditions permit. Where practicable by reason of the premises having garbage burners, the housewife should wrap garbage and sick room wastes in newspapers and make the package secure from flies and at the same time inoffensive. These should be kept with other like packages, until removed from the premises to be burned in a stove or furnace.

3. Other refuse, such as ashes, old papers, worn out utensils, broken furniture, old shoes, and trash of various other kinds. This kind of refuse may also for the most part be burned. Where a kitchen stove is used, quite a quantity of it can be thus disposed of; and, likewise, in the winter, in the heating furnace. There is not much danger from it, with a single exception. Any old cans or broken bottles or discarded utensils, which will hold water, are a distinct menace to health because if thrown out in the yard or alley, or a vacant lot as they collect rain water, and if allowed to lie for a few days afford opportunity for mosquito breeding. The extent to which the nuisance of mosquitoes is due to such water containers is little realized. But it is true, for this reason, that considerable pains must be taken to get rid of such vessels as will hold water.

4. Dust, another form of waste.

Perhaps you have not counted the dust which originates in your home as a specific form of waste; such, however, is its proper classification. It is, of course, fine, and composed of broken up materials from the wear

of floors, carpets, furniture, clothing, bedding, etc. While it mainly consists of hair and vegetable fiber, there are two other components. If one's foot is drawn across the floor we notice the presence of grit on the floor. The finely ground stone from the street which is contained in the earth tracked into our houses on our shoes, and to which a contribution is made from the plaster on the walls when they are brushed, is a distinctly objectionable element of dust. Experiments made among those who work in various materials have shown that the stone cutter is particularly subject to difficulty from the small particles of stone which he inhales, and which wound the lining of the air passages, and leave the surface of the membrane open to infection by disease germs. To a less extent this is true of the gritty dust which we find in our homes, whether from the floors, or blown in from the dusty street.

Someone has said that we may always find bacteria riding about on the dust particles which we see in the sunbeams. The housekeeper who cleans house and makes much dust in doing so is often rewarded by getting infected with bacteria that produce a cold. Frequently other members of her family suffer likewise. The nurse should see to it that dust is never thrown into the air with a broom. The careful nurse or housekeeper always wears a cloth over her mouth and nose when dusting books, shelves, etc.

If you were to go a mile out on the lake, take a sample of the air and count the dust particles which it contains, as can readily be done by apparatus provided

for the purpose, you would find much less dust than we find in the air of the city; and if you were to repeat the experiment, having gone over the lake four or five miles, you would find the atmosphere practically free from dust. The truth is that the dust particles do not remain suspended in the air, but drop into the water of the lake. The air on a mountain top is likewise free from floating dust and, therefore, free from germs. These facts constitute one reason why mountain air and ocean voyages are prescribed for persons in ill health.

5. House odors. Foul air and house odors are a definite class of wastes to be rid of in the home. The discussion of methods of ventilation, by which the air that has become foul, is removed, and its place supplied by fresh air, is a subject which must be considered by itself. Not many years ago sanitarians were talking about the window in a room. Within a year or two past we have come to feel that a room with two windows is much more desirable than a room with only one. The opportunity of securing air circulation into and out of a room with two windows, even with the door closed, is well worth keeping in mind. A patient having a prospect of a long illness should, if possible, be removed from a room with one window to a room with two.

Let us note that the air can be changed in a room with a single window if that window is so constructed as to be opened both at the top and at the bottom at the same time. The arrangement of shades often prevents the opening

of the window at the top. The shades must be arranged so that they can be moved down from the top of the window, and allow opportunity for the warmer air near the ceiling of the room to pass out-of-doors and be replaced by air coming in at the bottom of the window.

Odors due to cooking food are not really harmful, but cause extreme annoyance to the sick and in extreme cases, nausea. Those should be avoided by closing off the patient's room from the kitchen. Opening of the windows when the cooking of strongly flavored foods is being carried on will lessen the chances for cooking odors in the patient's room.

There are certain bodily emanations which occur and produce odors in clothing, beds and bedding, hence the proper storage of soiled clothing awaiting the laundry should be considered in every home. Grandmother's method of storing soiled clothing in a willow hamper is much better than putting it into a closed drawer or box in which there is no circulation of air. The nurse should not fail to remove these from the sick room daily.

One other odor sometimes met with should be referred to, that of illuminating gas. The insidious effects of such a poison are more serious than commonly appreciated. Especially is this true of the sick. Gas leaks should be reported promptly to the Gas Company, which is always anxious to have such leaks repaired immediately.

6. Vermin. This class of things to be rid of includes bedbugs, roaches, fleas, and rats. It is no reproach to the careful city housewife that an occasional bed-

bug is found in her home. The reproach attaches if it finds opportunity for lodgment and housing. Anyone is liable to encounter vermin of this kind in crowded street cars, ill kept stores, and other public places.

The simplest way to drive out bedbugs is to brush the bedstead, springs, and mattress with a feather dipped in kerosene. They can also be driven out with real hellebore or with corrosive sublimate solution.

Roaches are in the same class as bedbugs, and no house can be considered clean or healthful if infected with them. When they are cleaned out and powdered borax is sprinkled about in shelves and drawers, there is no difficulty in keeping rid of them.

It sometimes happens in the hot, dry weather of summer when a house is closed for a vacation period that fleas become very prevalent. It is only necessary to take up the carpets and rugs, clean the floors carefully and sprinkle them with eucalyptus oil, and they will not return.

The larger vermin, rats, are a numerous and destructive pest. There is no doubt that the rat population of all cities is equal to the human one (in Chicago this would be about two million, six hundred thousand), and that each of these rats costs us at least a dollar a year. Some recent estimates have counted the expense of keeping rats much greater than a dollar per year. At all events, we may safely say that the people of Chicago spend from two and a half to four million dollars a year to maintain the rat pest. It is not worth the money. We can lessen the number greatly

by getting rid of wooden floors in fuel sheds and stables, and in taking care that they do not have garbage for food. The old fuel bin of wood, and the grain box of wood, should be entirely replaced with metal receptacles, and cement floors should be laid in every place which now affords a rat runway.

There is real danger to health from the harboring of rats. While there is no probability of a serious outbreak in Chicago, it would not be at all strange if in the next few years, as more and more ocean-going vessels come from Eastern ports to our docks, plague infected rats are brought from the Orient to Chicago. If one of these rats, through the infected fleas which it harbors, communicates the infection to other rats, it may cost a great deal of money to protect ourselves from the human plague.

II. Things we ought to bring in. The most important of these are:

1. Light. There can be no health without light. Although attempt is sometimes made to prove that electric light is healthful, do not be deceived by any specious arguments into the belief that normal health and development is possible to those who live and work by electric light. Sunlight, and even the rays of the sun, must be brought into our homes as much as possible, if we are to have good red blood. Dark rooms are unhealthy and usually ill-aired and unclean. Sunlight serves to kill disease germs.

2. Fresh and Pure Air. Perhaps the best test of the purity of the air of the sick room is the simple one

of walking around the block and noticing whether the air in the rooms seems stale when you come in again. If it does, try to get more windows and doors open. Very few people yet realize the necessity of thorough change of air in the house. It is an interesting observation to walk about your neighborhood in the early morning and see how large a proportion of bedroom windows have been open through the night. You will find a good many in the neighborhood have been opened only a very slight amount, if at all. Pure air increases bodily vigor and strength, and makes one feel that life is worth living. It is absolutely essential for the sick.

In the winter-time the air in the house is likely to be too dry. Air that is too dry is irritating to the lining of the nose and throat and constantly breathing such air makes one likely to take cold easily. The remedy is to set a dish of water on or near the radiator. One reason that the kitchen is often the most comfortable room in the house in the winter-time is that the teakettle on the stove is constantly sending moisture into the air in the form of steam.

III. The things we ought to keep out. These may be divided into four classes, viz.:

1. Flies. There is abundant evidence that flies spread disease. The nurse should regard them as carriers of disease germs and insist that the patient's room be thoroughly screened against them.

A screening law is in effect in Chicago which requires the door and windows of every dwelling to be screened to prevent the entrance of flies, and which also requires that stable doors and windows be screened.

2. Mosquitoes. Very much the same argument applies to mosquitoes as to flies. The breeding of mosquitoes must be prevented, and they must be kept out of the home.

3. Street dirt should be kept out of the sick room in every possible manner.

4. Dampness. One of the things which we should keep out of the house is dampness. The uncemented earth cellar floor, or the cellar wall, wet by surface water, or the upper story of the house kept damp by a leak in the roof, all impose factors of discomfort and danger, and should be given immediate attention as affecting the sanitation of the home, and the well being of both well and sick.

LESSON 17.

PLUMBING AND THE HOUSEWIFE

A contemporary writer in a book entitled "The Care of the House," truthfully says, referring to plumbing, "The greatest comfort and convenience of modern dwellings is the source of some of the housekeeper's worst anxieties". This is true because the housekeeper has not often taken the trouble to become familiar with the plumbing system in her home. She has considered it a maze of pipes which she could not understand and, therefore, has not often tried to comprehend it. It is entirely practicable for the nurse to become so familiar with the purpose of every pipe and bend in the plumbing system as to fully understand its purpose, and whether it is operating properly or not. Such knowledge would remove many of the anxieties which frequently accompany cases of sickness.

What is the danger from bad plumbing? We have done away with the old time notion that defective plumbing caused great danger through the knowledge that contagion is communicated by contact with persons rather than by contact with things.

The chance of direct bacterial infection, through the air, of drains and sewers is so slight as to be practically negligible. The breathing of sewer air, like the breathing of all bad air, causes a distinct weakening of resistance to disease. This is a sufficient reason for knowing that the plumbing pipes and joints in our houses are tight and the traps safe.

It is a miracle of civilization to be able, by turning a handle, to promptly secure pure water, one of the important essentials of life, and having fouled it by use for washing, to see this waste which has now become a source of offense and danger, removed to some distant place and disposed of without further care on our part.

It was not always thus in cities. The streets of cities once were veritable cess pools, and in some places this is still so. The streets of Marseilles are said by some of our soldiers to be indescribably filthy, inhabited after nightfall by thousands of rats, which seem to be the only scavengers at work.

Water Supply.

The most wonderful and ancient works wrought by the hand of man are those of water supplies. Such works have existed since the time of ancient Rome to the present in the form of reservoirs, aqeducts and distribution systems, employed in bringing the water supply from various distant sources to the city homes.

Chicago is blessed with a near at hand water supply of good quality in Lake Michigan, but enormous sums of money must still be spent in building and operating cribs, tunnels, pumps and mains, to bring this water to our houses.

Sewerage.

Some cities in the old world depend still upon the dry system of disposing of human waste, although most civilized cities have adopted the water carriage system by which this waste is washed away through the use of large quantities

of water. This method, of course, greatly increases the volume, but affords great convenience in the use of pipes through which the liquid sewage may flow away.

The concealed systems of sewers and sewer mains which rapidly carry away the foul waste from our houses to some distant point for treatment or disposal, are not often thought of. Some are of large size. The net work beneath our Chicago streets includes many sewers six feet in diameter and upwards.

Our system of sewage disposal consists in dumping it into a large volume of flowing water in the drainage channel. This diluted sewage flows down the drainage channel past the dam at Lockport, into the Illinois River, and finally into the Mississippi. It is said to become harmless at a point some twenty miles outside of Chicago.

We will next consider the various parts of a house plumbing system:

1. The Drain.

That portion of the plumbing system which lies horizontally below the cellar floor constitutes the drain. To this are connected the various vertical waste pipes and the outlet from the catch basin.

As to material, the drain may be of cast iron or of tiled pipe, the former being the much more desirable material. In few large cities is tiled pipe allowed to be used under houses as at present in Chicago. The objections to tiled pipe are well known. It is brittle, has many joints, is not straight, cannot easily be repaired when

damaged and, worst of all, is rarely tight at the joints. In addition to this it is usually of too large size, and, therefore, allows solid matters to settle out instead of removing them promptly. Cast iron, the more reliable material, has a lesser number of joints which are made of lead, instead of cement, and are, therefore, more flexible. It can be cut into for cleaning and for repairs, and when closed again is as safe as previously.

The system of drainage in use in Chicago prescribes that the grease from kitchen sinks shall not be discharged directly into the drains but into an appliance called a catch basin, where attention may be given to it before it flows out into the drains.

Every properly built house has vertical pipes outside of the house which bring the water from the roofs into the drains. These pipes, usually called "rain leaders", perform a very necessary function but have little relation to the rest of the drainage system. They should always be in good repair, properly connected to the catch basin or drain, and should not become obstructed with the gravel and sand which often washes down from the roof.

II. Vertical Pipes.

The vertical pipes within the house may be classified as of four kinds:

1. Water supply pipes.
2. Soil pipes.
3. Waste pipes.
4. Ventilation pipes.

1. The water supply pipes are of small size, usually not much more than an inch in outside diameter, and are arranged to reach all the fixtures in the house. The principal supply pipe is connected with the water main in the street, brought into the house through the cellar wall, where it is provided with a stop-cock so that the water may be shut off at any time, and then with decreasing sizes extends by various branches to the separate plumbing fixtures, The water supply system includes, also, the hot water boiler, to which the heater is attached, and from which the pipes extend to the various fixtures supplied with hot water.

2. Soil pipes—In the old days most of the plumbing pipes were of lead. From the Latin name of plumbum, meaning lead, were derived the terms plumber, meaning a worker in lead, and plumbing, a system of lead pipes. At the present time very little lead is used in home plumbing. In some cases, however, short connections of lead soil pipe and occasionally of lead waste pipe, are used. The soil pipe is invariably distinguished by its size, being the largest pipe in the system. It is necessarily of considerable size because it always carries the discharges from the water closets, a fixture having a large outlet in order to avoid obstruction. It sometimes happens that the small fixtures in a bathroom, such as the lavatory and bathtub, also discharge through the soil or water closet pipe, but this is by no means invariably the case.

3. Waste pipes–The waste pipes discharge the liquid sewage from single and isolated small fixtures, such as

sinks, lavatories, etc., and are only about 1½ or 2 inches in size, not being large enough to carry safely the materials discharged through the water closet. These pipes are usually of wrought iron, a material more suitable for small pipes than large.

4. Ventilation pipes—Drainage systems, like human beings, require fresh air if they are to remain clean and sweet. Before this was well understood, and especially while lead pipe was largely used for plumbing, constant accumulations of the foul gases due to decomposition in pipes and drains, often accomplished corrosion in such pipes. Examples of corrosion have been seen which appeared incredible. At the present day these evils are overcome by providing a circulation of fresh air through the soil and waste pipes. This current of air enters from the street sewer, passes through the drain toward the house, upward through the soil and waste pipes, and is discharged above the roofs of the houses at the upper ends of these pipes. The air current is practically constant in its flow, being momentarily disturbed only when one of the plumbing fixtures is discharged and the sewage temporarily displaces some of the air in the pipes. As soon as the liquid waste has passed out the current again begins its upward motion. These portions of the pipes which extend from the fixtures to the roof level are called ventilation pipes. Air only, and never waste water, flows through them. Ventilation pipes also, are sometimes provided in two or three story buildings where one fixture is placed above the other, and

may be known by their size which is less than that of the soil or waste pipe near them.

Traps.

That part of the plumbing known as a trap is sometimes a subject of curiosity and mystification. A trap, perhaps the most convenient example of which you will find under your kitchen sink, is merely a bend in the waste pipe so formed that it will collect waste water and thus prevent the drain air from coming out through fixture. Sometimes bad plumbing is so constructed by those who do not understand the function of a trap that drain air constantly escapes through a sink or wash basin. A trap is not always as simple in form as that shown under your sink, but may have a complicated form which, however, can do no more than prevent the drain air from flowing out past the fixture. The water closet trap is of porcelain and is made when the fixture is molded from the clay, instead of being attached to the fixture afterwards.

If from any cause the water in the trap is absent, sewer air will flow out into the room. If the house is vacant for a long time the water may evaporate from the trap. If a fixture is not frequently used this may also happen. Therefore, if a lavatory or sink does not need to be used care should be taken to see that once a week water is poured into it to replace that which has evaporated from the trap, or the fixture should be temporarily removed by a plumber, and the opening closed in a safe manner. There are other ways in which the water may leave the trap, but these rarely

occur in a well designed system of house plumbing.

Plumbing Fixtures.

Not so many years ago plumbing fixtures were frequently found made of wood. Most of you have seen wooden sinks and, perhaps, wash trays, which by reason of the absorptive character of the wood, were constantly saturated and offensive. After a time slate and marble fixtures were common. Then cast iron sinks without coating, and with surfaces rough, like a kitchen pot, came into use. These were later coated with zinc to give the so-called galvanized surface which presented a slight improvement. In the last few years we have had few small plumbing fixtures which were not made of iron coated with a glistening white coating, called enamel. This material is not china or porcelain, as is the water closet, but is of the nature of glass, much softer than a real porcelain.

The process of coating the iron fixtures with enamel is an interesting one. A bathtub or sink is placed in a furnace where it becomes white hot and is then brought out from the furnace in that condition. The workman applies to the hot surface the enameled material in a powdered form, sprinkling it on from a perforated receptacle like a large salt-cellar. This enameling material consists of two parts, one is powdered glass, perhaps broken bottles ground fine, and the other part contains the sand, salt and soda, of which new glass is composed. When applied to the hot iron surface these materials are melted and soon begin to flow, so that in order to insure proper covering the sink or

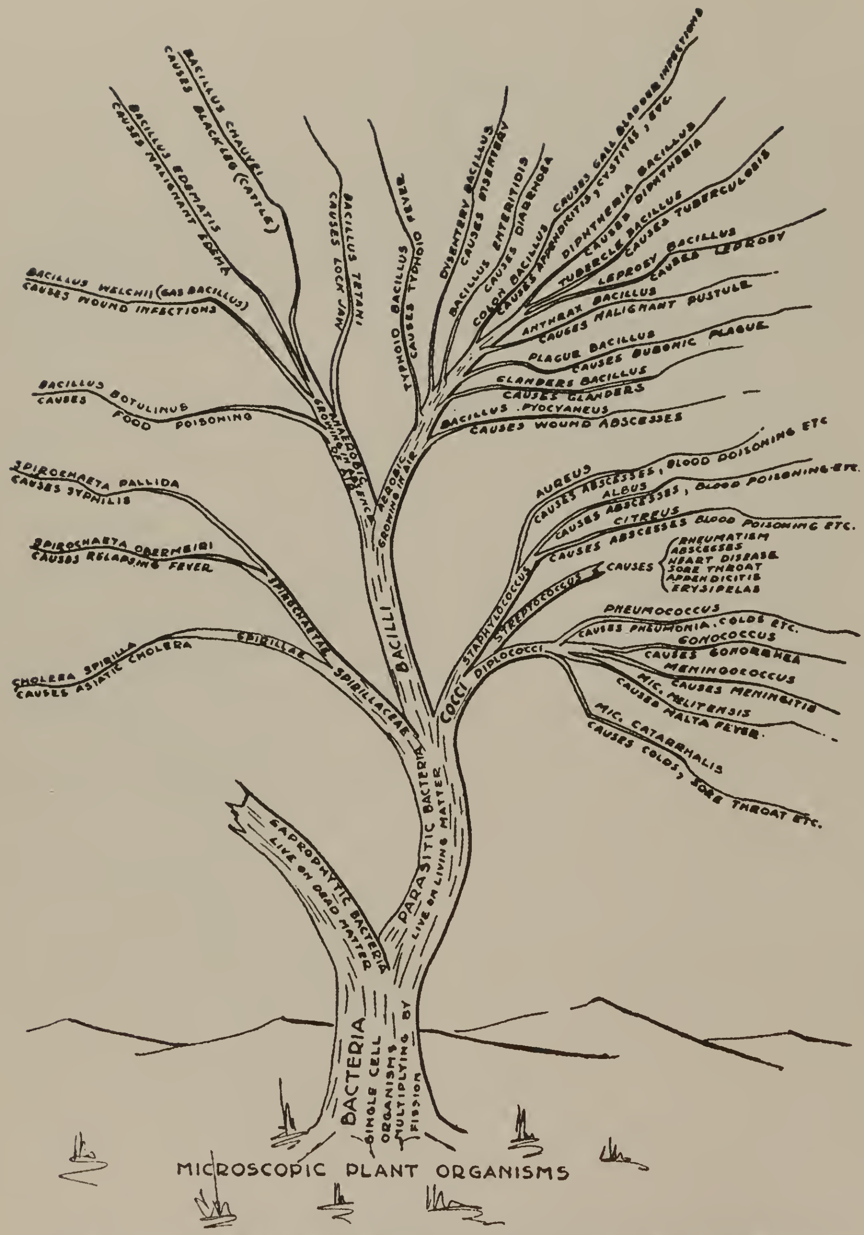
other fixture must be turned about in its hangings. When the coating has flowed over the surface, the fixture is again introduced into the furnace, reheated, and a second coating applied in the same manner. Three or four layers of the enamel are put on in this way.

This material, while admirably suited in most particulars for a plumbing fixture, has one grave defect, it is soft, and, therefore, becomes easily worn or scratched. It is most necessary that the housewife understand this. Care should be taken to use only soap and water in cleaning the plumbing fixtures, so that the surfaces may be kept in their new condition for a long time. If abrasive materials are used, or if pans and kettles are allowed to scratch the surface of the fixture, it can never recover its old-time polish, and can never be as easily cleaned as formerly.

ABBREVIATED OUTLINE OF MICROSCOPIC PLANT FORMS, INCLUDING THE MORE IMPORTANT DISEASE-PRODUCING ORGANISMS.

(See illustration. Study both carefully.)

- Bacteria (single celled organisms multiplying by fission)
  - Saprophytic, living on dead matter
  - Parasitic, living on animate matter
    - Cocci
      - Staphylococcus
        - Aureus, causes abscesses, blood poisoning, etc.
        - Albus, causes abscesses, blood poisoning, etc.
        - Citreus, causes abscesses, blood poisoning, etc.
      - Streptococcus, causes abscesses, rheumatism, appendicitis, heart disease, sore throat, etc.
      - Diplococci
        - Pneumococcus, causes pneumonia, colds, abscesses, heart disease, etc.
        - Gonococcus, causes gonorrhea.
        - Meningococcus, causes meningitis.
        - Mic. melitensis, causes malta fever.
        - Mic. catarrhalis, causes colds, sore throat.
    - Bacilli
      - Aerobic (growing in air)
        - Typhoid bacillus, causes typhoid fever.
        - Dysentery bacillus, causes dysentery, winter cholera.
        - B. enteritidis, causes diarrhea.
        - Colon bacillus, causes cystitis.
        - Diphtheria bacillus, causes diphtheria.
        - Tubercle bacillus, causes tuberculosis.
        - Leprosy bacillus, causes leprosy.
        - Anthrax bacillus, causes malignant pustule.
        - Plague bacillus, causes Bubonic plague.
        - Glanders bacillus, causes glanders.
        - B. pyocyaneus, causes wound abscesses.
      - Anaerobic (growing in absence of air)
        - B. tetani, causes lockjaw.
        - B. Chauvei, causes black leg (cattle).
        - B. edematis, causes malignant edema.
        - B. Welchii, causes wound infections (gas bacillus).
        - B. botulinus, causes food poisoning.
    - Spirillaceae
      - Spirilla
        - Cholera spirillum, causes Asiatic cholera.
      - Spirochaetae
        - Spirochaeta pallida, causes syphilis.
        - Spirochaeta Obermeieri, causes relapsing fever.



This bacterial tree was designed by Dr. John Dill Robertson, Commissioner of Health, as an aid to the pupils of the Chicago Training School for Home and Public Health Nursing.

FIGURE 25.

CONTAGIOUS DISEASES.

LESSON 18.

BACTERIOLOGY.

Living things, whether vegetable or animal, consist of cells. If you were to go into the woods today, and with a stick stir a muddy pond, take one drop of the water, put it on a glass slide and place it under a microscope, you would be able to see, through the lens of the "scope", living, moving, one-cell animalcules. The suffix "ule" means diminutive or small. Among these small one-cell animals you would find one that at one instant was round and in another instant was changed to oblong. In fact in a moment's time it would assume many shapes. Perhaps you would be able to see through this microscope that this one-cell animal, the name of which is ameba, was surrounding a bit of substance which it absorbed for food. In other words, the ameba is busy foraging for nourishment.

This one-cell animal has a life history just as distinct as yours and mine except in the matter of time. It was born, it lives, it reproduces its kind, just the same as animals do. Animals differ from ameba only in the fact that they are collections of cells. The number of cells in a human being is innumerable; a square inch of human skin contains millions of them. Plants are likewise made up of a collection of cells.

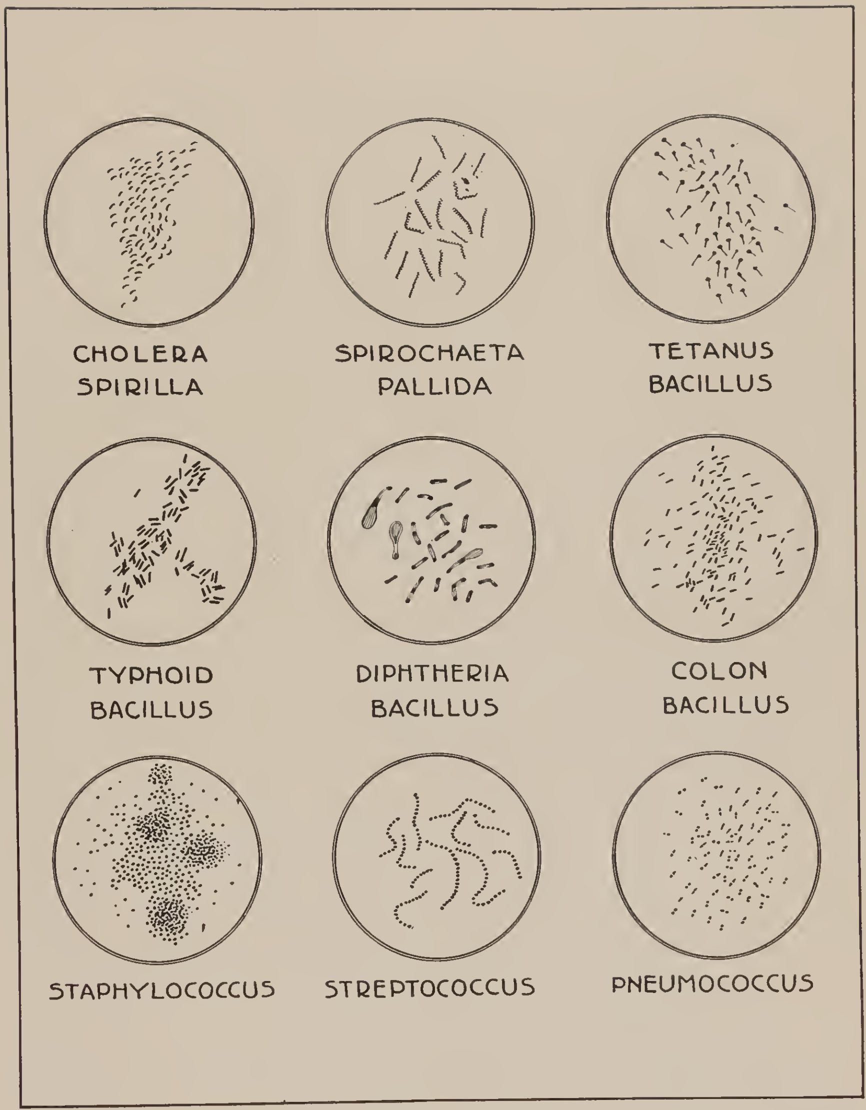
These cells are fastened together with a cement substance which lies between the cells holding one to another

and this substance is called intercellular cement substance. In other words, living plants and animals are not unlike a brick house, the bricks representing the cells and the mortar between them the intercellular cement. It requires a microscope to see the cells in living things, whereas we can see the individual bricks in a house provided we are close enough to it. In order to see the cells, whether in living tissue or in a house, you must bring them within the range of your vision. Therefore the microscope is an essential instrument for the study of all those things too small for the naked eye to see. There is no difference between cell architecture and brick architecture, except in size.

One-cell animals are called animalcules. We have one-cell vegetables which have various names. For example, we have certain forms of fungi, the definition for which you can now readily make yourself. They are defined as unicellular vegetable micro-organisms.

Fungi.

There are three classes of these organisms which every intelligent person should know. First are those fungi which multiply by dividing directly in two, just as you would break a stick in two. These are called fission fungi. Another group multiplies by throwing off small round bodies from the main round body, as buds are thrown from a twig of a tree. These are known as budding fungi, and we call them yeast cells. A third form of fungi is multiplied by splitting off a part of itself in much the same



TYPICAL BACTERIA.

FIGURE 26.

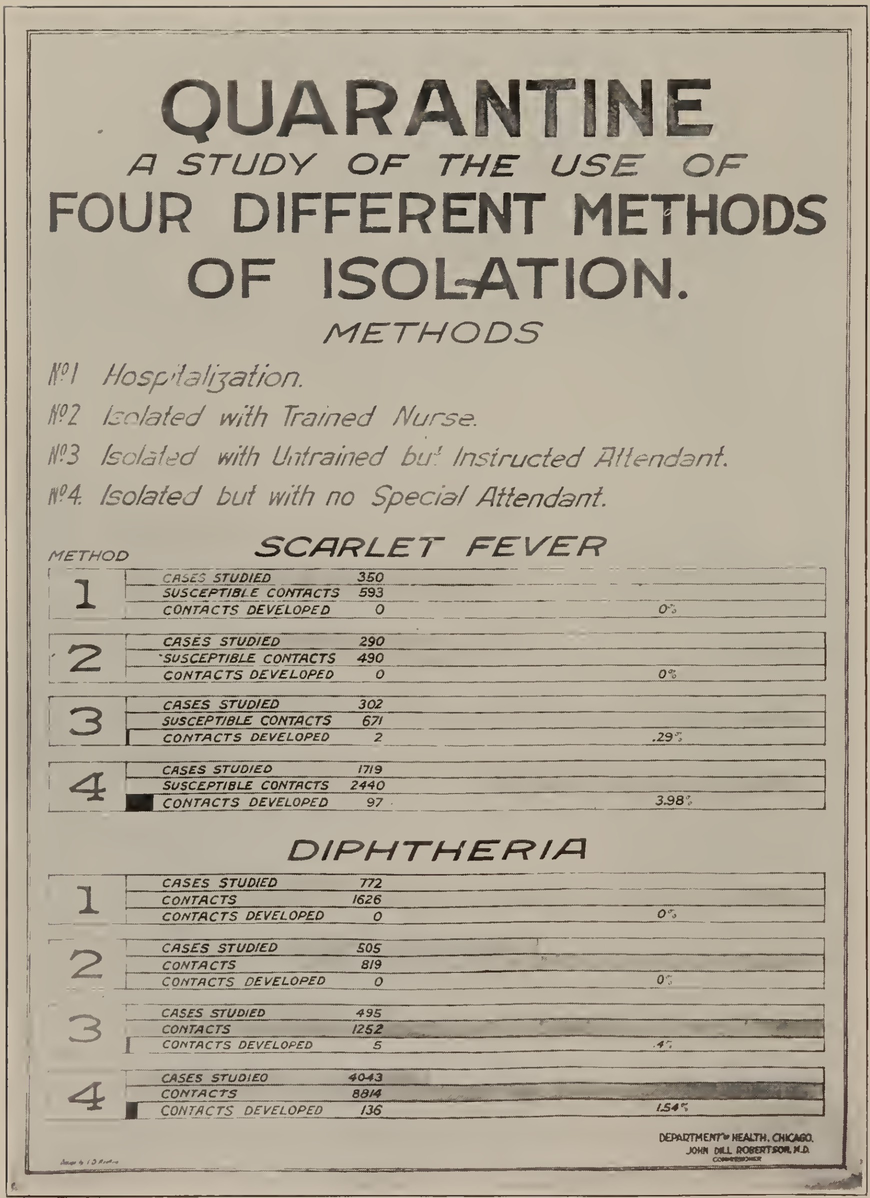

QUARANTINE
A STUDY OF THE USE OF
FOUR DIFFERENT METHODS
OF ISOLATION.
METHODS
Nº1 Hospitalization.
Nº2 Isolated with Trained Nurse.
Nº3 Isolated with Untrained but Instructed Attendant.
Nº4 Isolated but with no Special Attendant.
SCARLET FEVER
METHOD
1
CASES STUDIED 350
SUSCEPTIBLE CONTACTS 593
CONTACTS DEVELOPED 0
0%
2
CASES STUDIED 290
SUSCEPTIBLE CONTACTS 490
CONTACTS DEVELOPED 0
0%
3
CASES STUDIED 302
SUSCEPTIBLE CONTACTS 671
CONTACTS DEVELOPED 2
.29%
4
CASES STUDIED 1719
SUSCEPTIBLE CONTACTS 2440
CONTACTS DEVELOPED 97
3.98%
DIPHTHERIA
1
CASES STUDIED 772
CONTACTS 1626
CONTACTS DEVELOPED 0
0%
2
CASES STUDIED 505
CONTACTS 819
CONTACTS DEVELOPED 0
0%
3
CASES STUDIED 495
CONTACTS 1252
CONTACTS DEVELOPED 5
.4%
4
CASES STUDIED 4043
CONTACTS 8814
CONTACTS DEVELOPED 136
1.54%
DEPARTMENT OF HEALTH, CHICAGO.
JOHN DILL ROBERTSON, M.D.

Figure 27.

manner as the end of a hair will split. In other words, they split lengthwise and are called moulds.

The first class, fission fungi, are likewise called bacteria, the singular for which is bacterium.

While yeasts and moulds are very important in the art of making bread and canning fruit, from a purely health point of view an exact knowledge of them is not as essential as a knowledge of bacteria.

You have been taught that the suffix "ology" means a discourse or treatise on that to which it is connected. For example, mineralogy is a discourse on minerals; similarly bacteriology is a discourse on bacteria. The word bacterium is derived from the Greek word, meaning "little stick".

The careful mother and father never fail to warn the child of the dangers of the live electric current in the wires stretched along our streets, or the dangers of being bitten by a mad dog. Human life will be much safer when the knowledge of bacteria—at least the dangerous ones—is common to all of our people. It is essential that every nurse be thoroughly acquainted with them and the manner in which they perform.

Bacteria.

Bacteria are divided into two distinct classes, the first being called parasitic bacteria, for the reason that they live upon living tissues; in other words they attack us while we are living; they are in our bodies, and give off poisons from their small bodies. These poisons are called toxins. The second class is called saprophytic bacteria.

These bacteria live on dead tissues and cause putrefaction to take place in meat and vegetables. They also cause the human body to putrefy after death. It is in this manner that we are separated into small particles and thus return to the dust from whence we came. It is for this reason that embalming fluid is injected into the body as quickly after death as possible for the purpose of preserving it. The ancient Egyptians were most expert in this art and evidence in the form of mummies still exists to testify to this fact. So active are the saprophytes in dead tissues, that the greatest amount of knowledge and skill is required to prevent tissue that was once living from putrefying.

Parasitic bacteria are divided (as will be noted by reading the preceding bacterial tree and classification of bacteria) into three distinct types, viz., cocci, which are round like berries, the name coccus being the Latin name for berry; bacilli, which are rod-shaped; and spirilla, being spiral in shape like the letter "S". Typical examples of these types are shown in illustrations of bacteria preceding this lesson.

Cocci.

Cocci are divided into classes, depending upon their groupings. The coccus that remains alone as one berry is known as the nicrococcus; those in which there are two apparently fastened together, as the two sides of a coffee bean, are called diplococci; those that come in fours are called tetracocci; those that come in bunches like a bunch of grapes are called staphylococci, the word "staphylo" mean-

ing bunch of grapes; those that grow in chains are called streptococci.

You will have noticed that the words coccus and cocci have been used; the former is the singular and the latter the plural.

Bacilli.

Bacilli are likewise classified but in a different manner. All bacilli are rod-shaped, and the name is given them after the disease which they produce, and frequently the name of the discoverer thereof. Therefore the bacillus of typhoid fever is called bacillus typhosus, and frequently called Eberth's bacillus, named after Dr. Eberth, its discoverer.

Diseases Caused by Bacteria.

It will be noted that the bacterial tree previously referred to shows various cocci, bacilli and spirilla, their names in most instances telling the names of the disease they produce.

A number of these diseases, such as typhoid fever, diphtheria, tuberculosis, etc., are discussed in special articles in these notes. The nurse is advised to thoroughly familiarize herself with these details.

In certain other diseases, such as measles, scarlet fever, influenza, etc., the bacteria producing them have not yet been definitely isolated.

The cocci group is more definitely associated with surgical diseases than the other groups. Staphylococci produce local infections and inflammations. The staphylococcus

that produces yellow pus, such as found in boils, has been called staphylococcus pyogenes aureus. The word "pyogenes" comes from two Latin words, "pyo" meaning pus, and "genes" meaning producing. The word "aureus" comes from the Latin word aurum, or gold. Thus this pus is readily recognized because of its golden yellow color. If the pus is the color of ripe citrous fruit the organism producing it is usually found to be the staphylococcus pyogenes citreus. In white pus the staphylococcus pyogenes albus, (the word "albus" meaning white) is usually found.

Streptococci cause spreading inflammation. These are found in erysipelas, where the infection spreads rapidly from the point of infection. These are very virulent, and when they gain entrance to the blood stream frequently multiply so rapidly that they have been known to produce death in forty-eight hours.

Erysipelas is always a dangerous infection and especially so to women in childbirth. No nurse who has been caring for a case of erysipelas should think of nursing a case of confinement or be about a case of confinement until she has been thoroughly disinfected and has allowed several days to elapse after nursing such a case. The same is true of surgical cases.

Not all streptococci produce erysipelas. There are several distinct types of them, but they are all virulent.

Protozoa.

Closely related to bacteria are the minute animal forms known as Protozoa. For a long time scientists were

unable to distinguish between bacteria and protozoa. The former belong to the vegetable kingdom; the latter to the animal kingdom.

Some protozoa are the cause of diseases in the human body. The most common example of such diseases is malaria.

It is true of nearly all disease producing protozoa that they spend one part of their life in the human body and a second stage in the body of some intermediate host, often an insect. The protozoa that causes malaria spends one stage of its life in the stomach of the mosquito, and the other stage in man. The same thing is true of the protozoa that causes yellow fever.

The ameba responsible for amebic dysentery in man are minute animal organisms, not unlike the ameba found in stagnant water. They are classed among the protozoa, and enter the alimentary tract of man, as a contamination of food and drink, by the discharges of a person afflicted with the disease.

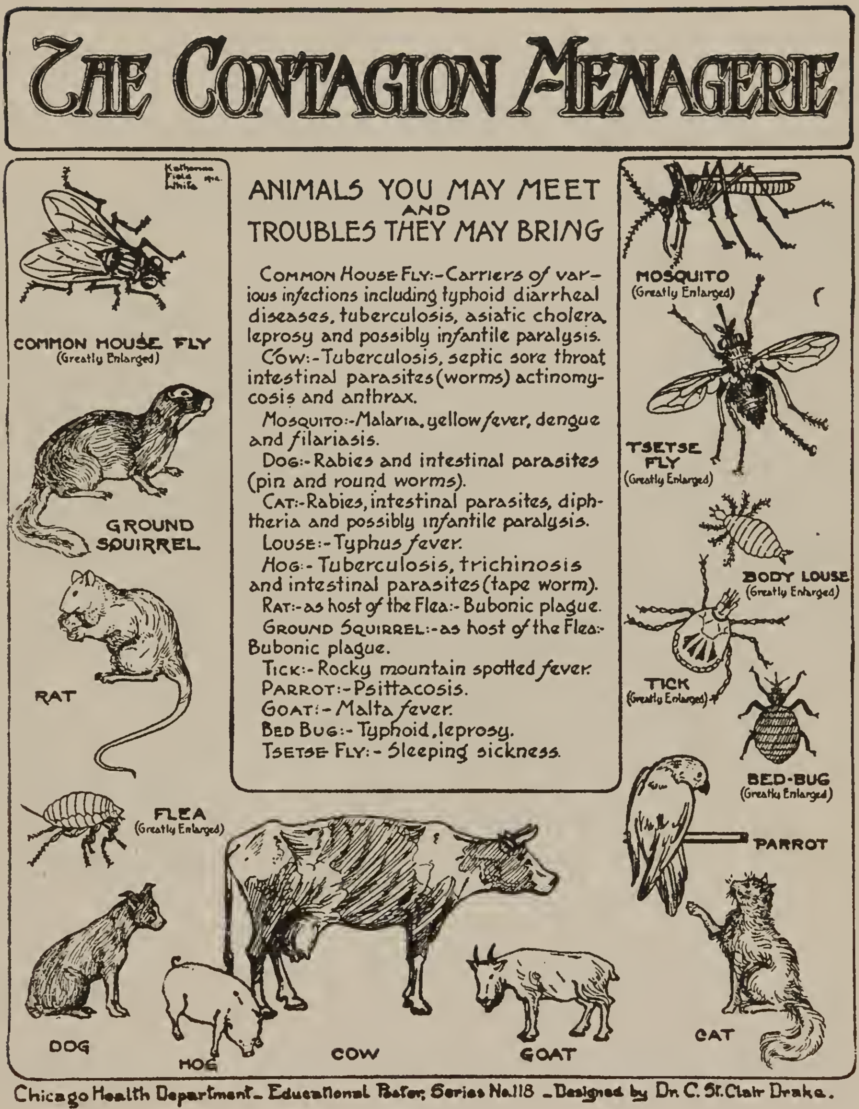

THE CONTAGION MENAGERIE
ANIMALS YOU MAY MEET AND TROUBLES THEY MAY BRING
COMMON HOUSE FLY:-Carriers of various infections including typhoid diarrheal diseases, tuberculosis, asiatic cholera, leprosy and possibly infantile paralysis.
COW:-Tuberculosis, septic sore throat intestinal parasites (worms) actinomycosis and anthrax.
MOSQUITO:-Malaria, yellow fever, dengue and filariasis.
DOG:-Rabies and intestinal parasites (pin and round worms).
CAT:-Rabies, intestinal parasites, diphtheria and possibly infantile paralysis.
LOUSE:-Typhus fever.
HOG:-Tuberculosis, trichinosis and intestinal parasites (tape worm).
RAT:-as host of the Flea:-Bubonic plague.
GROUND SQUIRREL:-as host of the Flea:-Bubonic plague.
TICK:-Rocky mountain spotted fever.
PARROT:-Psittacosis.
GOAT:-Malta fever.
BED BUG:-Typhoid, leprosy.
TSETSE FLY:-Sleeping sickness.
COMMON HOUSE FLY (Greatly Enlarged)
GROUND SQUIRREL
RAT
FLEA (Greatly Enlarged)
DOG
HOG
COW
GOAT
CAT
PARROT
BED-BUG (Greatly Enlarged)
TICK (Greatly Enlarged)
BODY LOUSE (Greatly Enlarged)
TSETSE FLY (Greatly Enlarged)
MOSQUITO (Greatly Enlarged)
Chicago Health Department - Educational Poster, Series No. 118 - Designed by Dr. C. St. Clair Drake.

FIGURE 28.


THE INVISIBLE RECEPTION COMMITTEE
Awaiting the Arrival of Resorters at many Summering Places
VACATION DAYS
I'LL GET YOU
POLLUTED WATER
DIRTY MILK
KATHERINE FIELD WHITE – 1913
It's all very fine to go away for rest and recreation —
But it's mighty unpleasant to return home with typhoid fever & regrets. Many do—None should.
LEARN HOW TO AVOID UNPLEASANT RESULTS.
Chicago Health Department, Educational Poster No. 164
Designed by Dr C. St Clair Drake

FIGURE 29.

LESSON 19.

HIGHER VEGETABLE AND ANIMAL PARASITES AND PARASITIC DISEASES.

In addition to the diseases caused by bacteria and protozoa there is a group of disorders due to higher vegetable and animal parasites.

Animals, especially insects, are also a means of spreading disease. They may do this more or less directly as the fly carries the germs of typhoid fever, or by acting as intermediate hosts as in the transmission of malaria by mosquitoes.

The most common diseases due to higher vegetable and animal parasites are the following:

A. Skin Diseases Due to Higher Vegetable Parasites:

Certain hyphomycetes or molds, that is small filament or thread-like vegetable organisms bearing innumerable spores, may be the cause of disease in the human body. They do not, however, like the bacteria, invade the body very deeply, but are confined to the skin, hair and nails. The most common diseases due to these parasites are:

I. RING WORM (Tinea Trichophytina).

This is a parasitic disease of the skin due to Trichophytons or Microsporons. Its most common location is the scalp, and children are most frequently affected. It may occur on the body, and when affecting the beard is known as Barber's Itch.

The disease is characterized by the formation of well-defined, reddish, scaly patches, spreading at the edge, and varying in size from a dime to that of a silver

dollar. The hair follicles are involved, resulting in a falling of the hair which, in the scalp, gives rise to areas of baldness, the scalp in these areas having a plucked fowl appearance. The disease spreads in a ring-like or circular manner, giving rise to the characteristic appearance, from which the name of the disease is derived.

The areas enclosed by the rings soon become scaly, giving rise to scurfy patches over which the hairs are broken off, and have a stubby appearance. Later these areas may become soft and boggy. By a joining or coalescing of patches a large area of the scalp or skin may become involved.

Ringworm is infectious and is spread by coming in contact with a case or infected articles, such as caps, brushes, combs, etc.

II. FAVUS.

This is an infectious disease of the skin, usually affecting the scalp, due to Achorion Schoenleinii. It is characterized by the formation of dry, sulphur yellow saucer-shaped crusts, varying in size from a pinhead to a dime. The disc-shaped crusts often have a depression in the center. The hair follicles are involved and spots of permanent baldness frequently follow the disease.

When the disease has lasted some time, scales, crusts and bald scarred areas may be present.

III. TINEA VERSICOLOR.

This is a mildly contagious disease of the skin, due to the vegetable parasite known as Microsporon furfur.

Adults are most commonly affected. It is characterized by irregularly shaped bran-like, brownish patches, situated for the most part on the breast, groins or armpits. There are no symptoms besides a slight itching at times. Daily scrubbing with soft soap and water will usually cure the disease in a short time.

B. Skin Disease Due to Animal Parasites:

I. ITCH (Scabies).

The itch is a contagious disease of the skin caused by the invasion of the skin by the Itch-mite (Acarus Scabiei). The irritation caused by the biting and boring in the skin by this parasite gives rise to intense itching which, together with the effects of the scratching, are constant symptoms of the disease.

The portions of the skin most commonly penetrated by the itch-mite are the areas between the fingers, front part of the forearm, the abdomen and parts of the body which are subject to pressure from the clothing. The head and face are usually not affected. The itching is most marked at night.

Close contact, such as sleeping together, is required for the transmission of the disease.

The treatment of itch is comparatively simple. Sulphur ointment is an old and reliable remedy. It is applied to the affected parts freely after the patient has had a hot cleansing bath. Thorough application of the sulphur ointment night and morning for two or three days, after which the patient takes a bath and changes his underclothing, usually

results in a cure of the disease. The underclothing and bed-linen must be washed and boiled to prevent reinfection of the patient.

II. LICE (Pediculosis).

Three kinds of lice may find lodgment upon the body, viz.:

1. Head Lice—Affecting the head.
2. Body Lice—Affecting the body and infecting the clothing.
3. Pubic—Affecting the genital region and other hairy parts, except the head.

The presence of lice on the skin always causes severe itching, which induces scratching and results in irritation and inflammation. In children, swelling of the glands of the neck usually accompanies the presence of head lice and the resulting infection and eczema of the scalp.

The female head and pubic lice deposit their lentil-shaped, glistening, whitish eggs or nits upon the hair, close to its emergence from the skin. They are hatched in six days and the young mature in eighteen days. One female, if left undisturbed for eight weeks, may have an offspring of 5000 young lice.

The clothing lice live in the clothes and only visit the body for the purpose of obtaining nourishment.

The following is the routine treatment recommended for the eradication of head lice:

Olive Oil (Sweet Oil) Equal Parts
Kerosene Oil (Half a Pint of Each)

Mix the kerosene and sweet oil, and rub the mixture well into the scalp. Then with a piece of

muslin cover the hair and fasten it above the head. Do not bring the head in contact with a lighted gas jet or flame of any kind.

In the morning wash the scalp well with soap and hot water, then wet the hair with hot vinegar. After which use a fine toothed comb wet in hot vinegar to remove "nits". Dry the hair with a towel before going out.

Repeat this two or three nights.

The treatment for body lice is a change of clothing and subjecting the patient to a cleansing bath of soap and water. The lice and nits in the clothing may be killed by boiling, steam sterilization or sulphur fumigation.

(Lice as carriers of disease are considered at the end of this lesson.)

III. OTHER ANIMAL PARASITES CAUSING SKIN LESIONS.

(a) Bedbugs (Cimex lectularius).

From the bite of the bedbug there results a hive-like elevation, in the center of which appears a red spot which does not fade on pressure.

(b) Common Fleas (Pulex irritans).

Flea bites also result in hive-like areas with a central red spot.

(c) Bird Mites (Dermanyssus avium).

This is the common hen louse, found in henneries and avaries. It produces an itchy, spotty eruption on the hands and forearms.

C. Animal Parasites Affecting the Digestive Tract.

I. ROUND WORMS (Ascaris lumbricoides).

This is the most common intestinal parasite in children. The worms are round, tapered at the ends, about the same thickness as a rainworm, and vary from four to

eight inches in length. They live in the small intestine.

The symptoms are not characteristic. Malnutrition and intestinal disturbances are most frequently observed. Irritability, grinding of the teeth and convulsions may occur in nervous children.

II. PINWORMS.

These are pin-like worms, from a quarter to a half-inch long. They develop in the small intestines and descend to the large bowel and rectum. They migrate from the rectum especially at night, and cause intense itching about the anus. Sometimes they enter the vagina.

Children are most commonly affected. Loss of sleep, irritability and the itching about the anus are the common symptoms. In children a rectal injection of a strong solution of salt in water usually cures the condition.

III. TAPEWORMS.

The most common tapeworms affecting man are the:

(a) Taenia solium (Pork tapeworm). This develops its larval stage in hogs, especially in the tongue and fleshy parts of the shoulders, neck and diaphragm. The little cysts can here be seen with the naked eye.

(b) Taenia saginata (Beef tapeworm). This is the most common in America. Its larval stage is passed in cattle, particularly in the muscles of the jaw and in the heart and brain. The larva (cysticerci) are not as large as those of the Taenia solium; therefore, they cannot be seen so readily with the naked eye.

(c) Bothriocephalus latus (Fish tapeworm). This is not so common in this country. It undergoes its larval stage in the pike, trout, salmon and perch.

The larvae of all forms of tapeworm are readily destroyed by heat; hence, the cooking of meat and fish is the best preventive measure against tapeworm infection.

The most characteristic symptoms of tapeworm infection are the passing of segments of the worm. Other symptoms are abdominal pains, diarrhea, nausea and loss of appetite. Sometimes the appetite may be increased. In children, convulsions may occur.

IV. TRICHINA.

Infection of man with trichinae results from eating pork containing trichinae in the larval stage. From such larvae adult worms develop in the intestine, which soon propagate. Their young migrate from the intestine, enter the lymph vessels and veins and are lodged in the muscle fibres, especially of the chest and diaphragm, where they undergo their larval stage.

The larvae of trichinae contained in pork are readily killed by heat, which is the best means of preventing infections. Simply curing and smoking the pork, such as ham, does not always destroy the larvae.

The symptoms are due first to the devolpment of the worms in the intestinal tract, which may give rise to colic and diarrhea, and secondly, to the migration of the larvae,

which is accompanied by fever and pain in the muscles, resembling muscular rheumatism.

D. Insects as Carriers of Disease.

One of the greatest achievements of modern medicine is the discovery of the role of insects in the transmission of disease. It is particularly due to the work of American investigators that the role of the mosquito in the transmission of yellow fever has been established.

The simplest way in which insects may convey disease is by carrying disease germs on their feet or mouth parts. An insect may become contaminated with infected sputum or stools, and carry such infection on its feet to food. A more complicated method is the way in which the flea carries bubonic plague. Here the plague germs are taken into the stomach of the flea, where they multiply and are eliminated in the excretions, from which infection occurs. The most common disease carried by insects and arachnida are the following:

(a) House Fly (Musca domestica).

This may carry the germs of various diseases on its feet or mouth parts. Typhoid fever, dysentery, and summer diarrhea of infants may be carried in this way.

The house fly lays its eggs upon manure, especially house manure. An adult fly deposits four to six lots of 120 or 150 eggs at intervals of from three to four days. In about twelve hours the eggs develop into larvae, which in from four to six days crawl away from their breeding places, burrowing into the loose ground beneath the manure pile. Within another four to seven days the larvae undergo

the pupa stage and develop into full-grown flies with wings. The young females begin to deposit eggs nine to twelve days after emerging from the pupa stage. The time of development in all stages depends much on the temperature of the weather.

The best way to prevent flies is to destroy their breeding places, namely the manure piles, and to kill the live flies appearing early in the season from which the summer's offspring is derived.

(b) Mosquitoes.

It is now definitely established that malaria and yellow fever are transmitted by mosquitoes.

Malaria is conveyed by various kinds of the subfamily of mosquitoes known as Anophelina. These mosquitoes become infected with malaria by biting a person affected with the disease. The malaria germ develops in the body of the mosquito and finds its way to the salivary glands. Such an infected mosquito by biting a person can, in turn, transmit the malaria to him. Mosquitoes not infected do not transmit the disease.

Yellow fever is contracted in no other way than by the bite of the mosquito known as Stegomyia fasciata. As in malaria, it is necessary that the mosquito should previously feed on the blood of a person sick with the disease. It takes about twelve days for the yellow fever infection to develop in the body of the mosquito before it can be transmitted to man.

All mosquitoes lay their eggs in stagnant water.

They hatch in twenty-four hours and develop into the larval stage, known as wrigglers. These are small tad-pole like organisms, which swim around in the water with a wriggly movement. At regular intervals they come to the surface for air.

In twelve to fifteen days the larvae undergo the pupa stage, and in twenty-four to thirty-six hours the adult mosquito emerges from the surface of the water.

Inasmuch as mosquitoes breed in stagnant water the means of exterminating them is to drain all stagnant pools, to screen cisterns and to guard against accumulation of water in tin cans, roof gutters, etc. When draining is impracticable the surface of the water may be covered with crude oil, which prevents the mosquito larvae, the wrigglers, from coming to the surface and obtaining their necessary air supply.

(c) Fleas.

The bubonic plague is spread among rats by the agency of rat fleas (Xenopsylla cheopis). In California the disease was found infecting ground squirrels.

Man, as a rule, contracts plague from infected rats through the agency of infected fleas harbored by these animals.

From the foregoing it is evident that the safest means of guarding against plague infection is to prevent the entrance of plague-infected rats from countries where plague is endemic.

(d) Lice.

Within recent years it has been demonstrated that typhus, commonly called Spotted Fever, is transmitted by the bite of the louse (Pediculis). This was one of the scourges of the middle ages and is a disease that is always associated with filth and overcrowding. It is still quite prevalent in Eastern and Southeastern Europe.

The discovery of the louse as the carrier of typhus fever explained many of the factors noted in connection with the development of this plague, and during the recent war the delousing measures employed in all the armies resulted in keeping the disease within bounds.


HEALTH
SCHOOL INSPECTION
THIS
IS THE GATE
that shuts out disease from the schoolhouse.
Strengthen The Gate and
Keep It Closed!
Chicago Department of Health – Educational Series No. 90
Katherine
Field
White.

FIGURE 30.

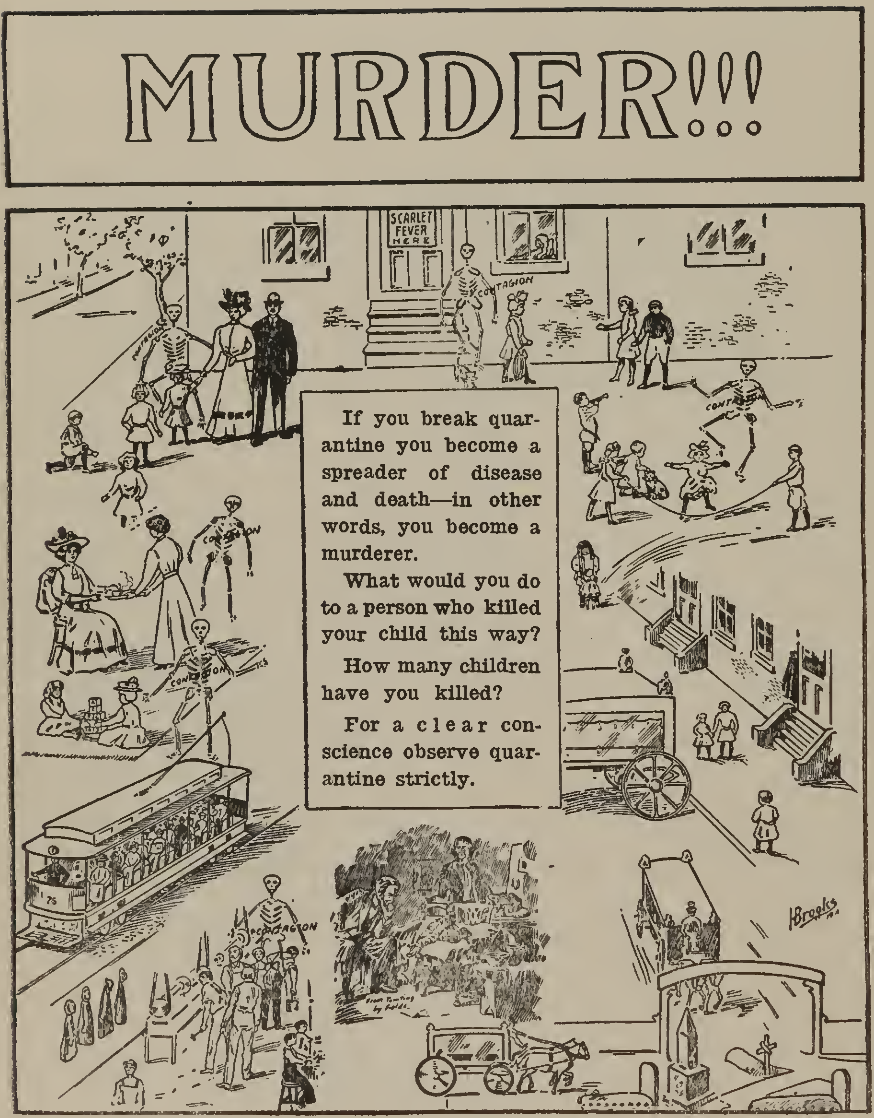

MURDER!!!
SCARLET FEVER HERE
CONTAGION
If you break quarantine you become a spreader of disease and death—in other words, you become a murderer.
What would you do to a person who killed your child this way?
How many children have you killed?
For a clear conscience observe quarantine strictly.
CONTAGION
H. Brooks

FIGURE 31.

LESSON 20.

CAUSES, SYMPTOMS AND PRVENTION OF CONTAGIOUS DISEASES.

Contagious diseases are largely preventable,—some of them entirely so. It is the law of nature that every living thing has its enemy, but at the same time, all have a defense against such enemies. Self-defense is a law of nature. Some creatures have a good defense while others defend themselves feebly.

The human race kills every living thing. They even kill each other. In turn the human race has many enemies. Through his superior brain man has mastered the visible animal kingdom. He no longer hides in caves, sleeps in trees or builds huts over the lakes to secure safety from savage animals. He can avoid the things he sees but he is not so successful against the millions of invisible enemies, the micro-organisms or germs. He is learning to defend himself against these deadly agents and is in a fair way to succeed.

It is only about 45 years since we even suspected that the greatest destroyers of human life were the invisible germs, only to be seen by aid of a microscope.

These facts are mentioned because it will be your privilege as nurses to save life by preventing contagion—invisible contagion—from passing from one person to another, for that is the way contagion is spread and kept alive. You should know the cause of disease, how it is conveyed and how to avoid it.

The length of time between the time when one is exposed

to a disease and the time when the disease develops is called the incubation period.

Immunity. The disease germs as they grow and develop in the body throw off poisons into the system of the patient. These poisons are called toxins. The blood of the sufferer produces substances to destroy these toxins. The substances produced by the blood are called antibodies or antitoxins. If the blood can produce antibodies faster than the disease germs can produce toxins, the person gets well.

Within recent years it has been found that one can inject an animal with the germs of a disease and use the antibodies that the blood of such an animal makes while fighting the infection thus produced to assist a patient in overcoming a similar infection. This is done by injecting such immune serum into the blood of a person having the same disease, whose blood is not making antitoxins rapidly enough.

The best known of these antitoxins is the one used for the treatment of diphtheria. It is secured from the blood of horses that have been injected with diphtheria toxin, and always cures diphtheria if given early enough in the disease. In addition to diphtheria antitoxin there is one which will prevent the development of lockjaw if given before the symptoms develop.

Similarly, persons can be protected against infection, notably typhoid fever, by the injection of killed germs. These bring about the production of antibodies which protect the person against infection by living germs. This manner of immunizing is called vaccination.

The earliest form of vaccination was that practiced by Jenner, who found that an infection of a person with cowpox protected against subsequent development of smallpox.

Colds.

Colds in the head are manifested by inflammation of the mucous membrane or covering of throat, air passages, and cough. The more we know the more we suspect colds are caused by germs, but certain it is that overheated air, lacking the normal amount of moisture, causes irritation and congestion of the lining of the air passages and brings about directly or indirectly what we call a cold.

It is certain that pure cold air does not cause colds but tends to prevent such a condition. Severe exposure to cold and wet seems to precipitate a cold when the predisposing conditions are present. That is when the mucous membrane is in an unhealthy condition from breathing dried, furnace-heated air. No doubt various kinds of germs contribute to what passes under the name of colds. Do not allow anyone with a cold to cough or sneeze in your face. Do not cough or sneeze in other people's faces. Everyone at all times should do his coughing and sneezing into a handkerchief. Handkerchiefs should be carried where they can be gotten hold of quickly. The defense against colds is to breathe normal air and dress so as to protect yourself against wet and cold. Avoid becoming chilled and dodge the cougher and sneezer. The living rooms should not be heated above 68 and the indoor clothing should not be too heavy. Heavy clothing should be put on when going

out in cold weather. Dress so as to feel as comfortable outdoors as in the house.

Bronchitis.

Bronchitis is an inflammation of the lining membrane of the air passages, varying somewhat according to the location of the inflammation, in the large air tubes or smaller air tubes. There is present a dry cough, often hoarseness, usually fever following a chill or chilly feeling, varying in degree of severity. It may go on to a chronic state with expectoration.

Cause: Bronchitis is a common symptom of ordinary "colds", and may be caused by the various germs of the infectious diseases—such as measles, whooping cough and influenza; by breathing irritating substances such as dust, smoke, baked furnace air and irritants of various kinds. Some medicines are capable of producing bronchitis, as iodide of potassium.

How Conveyed: From person to person by coughing sneezing and spitting or by inhaling irritants of various kinds and by kissing.

How to Avoid: Allow no one to cough or sneeze in your presence without a cloth or handkerchief held before the mouth; protect others from yourself in the same way. Breathe normal air, free from dust and smoke.

Infantile Paralysis.

Infantile paralysis is an inflammation of the gray matter of the spinal cord with destruction of nerve cells. There is mild fever, muscular pain, twitching and paralysis

of groups of muscles. It is usually a child's disease, though adults are sometimes victims. Slight fever and paralysis of one or more limbs are the principal symptoms.

Cause: Undoubtedly a germ disease, though the germ is not definitely known. The germ is located in the nose and throat.

How Conveyed: From person to person by coughing, sneezing and spitting. May be carried on things while the infectious material is fresh, but more frequently by hand to mouth infection and by kissing.

How to Avoid: Isolate the patient in a room screened against flies. Allow no one in the room but the doctor and nurse. Disinfect everything taken from the room. For protection, the nurse should wear a mask while caring for the patient.

Epidemic Cerebrospinal Meningitis (Spotted Fever).

Children are most susceptible to this disease. It is essentially an inflammation of the covering of the brain and spinal cord. The onset occurs a short time after exposure, three to eleven days. Usually fever is present following a chill. There is headache, muscular soreness, tenderness over the body, retracted head with stiff neck, vomiting, dullnes sand stupor, sometimes convulsions and paralysis. An eruption appears in some cases.

Cause: Micro-organism (Diplococcus intracellularis meningitidis). This probably enters the throat, nose and tonsils.

Incubation period: Three to eleven days.

How Conveyed: By coughing, sneezing and spitting, by hand to mouth infection, by kissing and may be carried on things while fresh.

How to Avoid: Isolate the patient in a screened room. Allow no visitors. Disinfect everything before removing it from the room. Destroy all discharges from the mouth, nose and bowels. Have patient use cloth or handkerchief when coughing or sneezing. The nurse should wear a mask.

<u>Pneumonia—Lung Fever:</u>

For ten years the average yearly deaths in Chicago from pneumonia have been 4,849. In the last ten years the epidemic diseases, scarlet fever, diphtheria, cerebrospinal fever, measles, smallpox, whooping cough, infantile paralysis and typhoid fever have killed 26,672 persons. In the same time pneumonia killed 48,492. About one-eighth of the deaths from all causes is charged to pneumonia.

Pneumonia is characterized by an acute inflammation of the lungs. The onset is by a chill followed by fever, rapid breathing and cough. The sputum is rusty, and there is usually pain in the chest, felt when breathing.

Cause: A germ (Diplococcus pneumoniae) found in the air passages.

Incubation period: One to three days.

How Conveyed: From person to person by coughing, sneezing and spitting; by hand to mouth infection and kissing; may also be conveyed on articles while the infection is fresh.

How to Avoid: Isolate the patient in a screened room. Destroy all discharges from the patient or put them into a disinfecting solution. Have the patient use cloths or handkerchief to catch discharges from mouth and nose. Such cloths are then disinfected or burned. The nurse should wear a mask while nursing the patient and after any attention to the patient she should wash her hands. No visitors should be allowed until the quarantine is lifted.

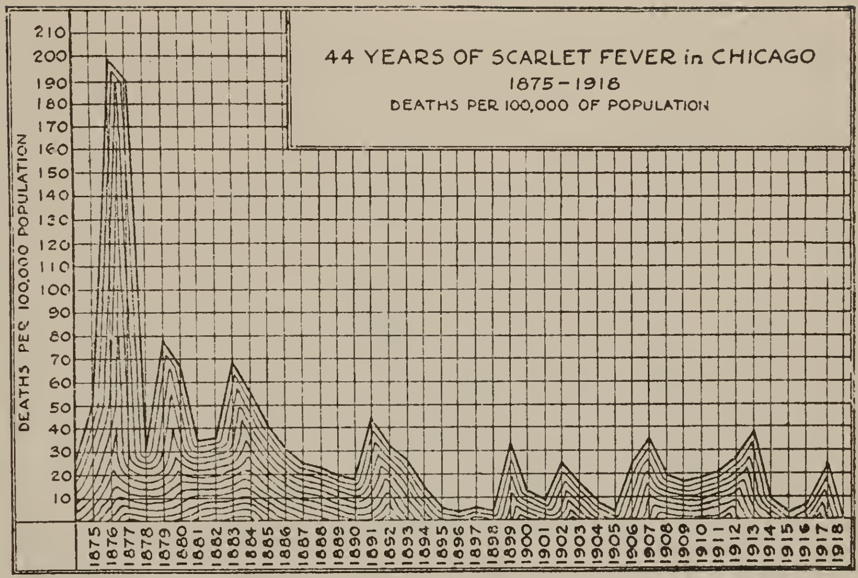


Figure 32.

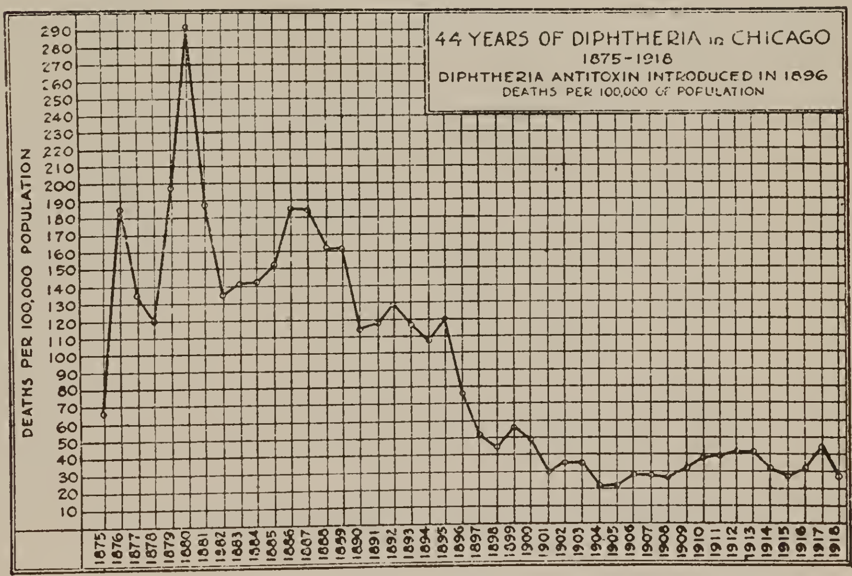


Figure 33.

THE PREVENTABLE PERILS SURROUNDING THE CHILD

One baby out of every 7½ dies before reaching the age of two years.

About 80 percent of these deaths are from preventable diseases.

To break this Ring of Trouble
More Men and More Money are required.

Department of Health – Chicago. Educational Series No. 99.

FIGURE 34.

LESSON 21.

CONTAGIOUS DISEASES—Continued.

Septic Sore Throat (Streptococcus Sore Throat).

This is an epidemic and contagious disease. The symptoms are sore throat, redness and swelling, but no membrane; glands in neck swollen and sometimes suppurate; extreme prostration; suppuration in middle ear, abscesses around or about the tonsils. Various fatal complications may result, such as heart disease, inflammation of the joints, etc.

Cause: A germ—streptococcus pyogenes. This germ causes erysipelas when introduced into the skin.

How Conveyed: Septic sore throat is conveyed by milk, or from person to person by coughing, sneezing and spitting; hand to mouth infection, or by kissing. Milch cows have a disease of the udder called garget. The germ causing septic sore throat is found in the milk from a cow having this disease. Most epidemics of septic sore throat have been traced to milk infection. It can be conveyed by articles or things if the same are freshly contaminated.

How to Prevent Infection: Pasteurize the milk. Isolate the patient in a room screened against flies. Allow no one to visit the room except the doctor and nurse. Disinfect and destroy all discharges from the patient's mouth and nose. Require the patient to use a cloth or handkerchief when coughing or sneezing. Disinfect everything in the room before removing the same. The nurse should wash her hands after every attention to the patient. It is safer for the nurse to wear a mask.

Tonsillitis (Quinsy).

Tonsillitis is an acute inflammation of tonsils. If suppuration or abscess formation occurs it is called quinsy. Often small white patches on the tonsils are present. The germs may be absorbed, causing fatal diseases of the kidneys and acute inflammatory rheumatism.

Cause: The germs causing tonsillitis are the pneumococcus, staphylococcus and streptococcus.

How Conveyed: The disease is conveyed by coughing, sneezing and spitting; hand to mouth infection and kissing. It may also be conveyed by milk.

How to Avoid: Not so contagious as some other diseases, but the patient should be isolated, discharges from nose and mouth disinfected and destroyed. The nurse should keep in mind the dangers to herself and others present from the patient coughing and sneezing and from hand to mouth infection and kissing.

Diphtheria.

A contagious and epidemic disease characterized by membranous inflammation of the throat and severe general intoxication. Killed 723 persons in Chicago in 1918.

Cause: Germ——Klebs-Loeffler bacillus.

Incubation period: Two to seven days; usually two days.

How Conveyed: By coughing, sneezing, spitting; hand to mouth infection and kissing. Not often from milk. It can be conveyed on things if freshly contaminated. A common source of infection is fromcarriers, i. e., persons

with diphtheria germs in the throat, though they are well.

About 50 per cent. of children will not take the disease when exposed; 80 to 90 per cent. of grown people are immune and will not contract diphtheria when exposed.

How to Avoid: Isolate the patient in a hospital or room at home; disinfect and destroy all discharges from nose and mouth; no visitors allowed. An immunizing dose of antitoxin should be given to all persons in contact with the disease unless they have previously been vaccinated with diphtheria toxin-antitoxin. Nurses should be vaccinated against diphtheria. If not thus protected, they should be immunized with antitoxin and wear a mask. Carriers of diphtheria germs should be quarantined until free from germs. The nurse should always wash her hands after every attention to the patient.

Scarlet Fever (Scarlatina-Duke's Disease).

An acute contagious and epidemic disease. Three to seven days after exposure, the disease comes on with fever, vomiting, sore throat, often a membrane is present, coated tongue, red about the margin, and in 48 hours a rash appears over the body. An attack usually gives immunity. It is a disease of degree from so slight an attack as not to put the patient to bed, to the fulminating type that scarcely admits of a recovery.

Cause: Undoubtedly a germ, though the germ is not known. The infectious agent is located in the nose and throat.

Incubation period: One to seven days; oftenest two to four days.

How Conveyed: From person to person by contact, coughing, sneezing and spitting, hand to mouth infection, by kissing and in milk; on things if the things are freshly contaminated.

How to Avoid: Isolate the patient in a hospital or room at home. Allow no one but the nurse and doctor in the room. Disinfect and destroy all discharges from nose and throat or discharging ears, or suppurating glands. Isolate the patient for five or more weeks. Pasteurize the milk. It is safer for the nurse to wear a mask while in close attendance upon the patient.

Measles (Morbilli, Rubeola).

An acute self-limited contagious, epidemic disease. Highly contagious. Occurs in about seven to ten days after exposure. The disease comes on gradually with chilliness and fever, red and watery eyes, catarrh of the nose and throat. Fever usually drops the second day with a rise on the third day, followed by an eruption on the skin the fourth day. Koplik's spots can be seen in the mouth as early as the first day. When the rash is well out, the fever may recede a little, but continues rising and the height of the fever is reached about the sixth or seventh day of the disease and then begins to decline. One attack usually gives immunity, but not always.

Cause: A germ disease undoubtedly, but the germ is not known.

Incubation period: Seven to eighteen days; oftenest fourteen days.

How Conveyed: From person to person, by close contact; by coughing, sneezing, spitting; hand to mouth infection and kissing; not often on things but can be by fresh infection on handkerchief or hands.

How to Prevent: Isolate the patient in a room until there has been no fever for 48 hours. It is a child's disease, but adults will have the disease when exposed to it if they have escaped it in childhood. Destroy contagion as it comes from the patient. Disinfection of the room is not necessary.

German Measles (Roetheln, Rubella).

An acute, contagious, epidemic disease, having a mild fever, cough, some sore throat, enlargement of glands in neck and a rash appearing the first day. This disease is often confused with measles and scarlet fever. The disease comes on about 21 days after exposure.

Cause: No doubt a germ but it has not been discovered. One attack usually gives immunity.

Incubation Period: Two weeks or longer.

How Conveyed: By close association. By coughing, sneezing, spitting in the presence of others. Not often carried on things.

How to Avoid: Isolate the patient ten days or two weeks, and all susceptible contacts for three weeks.

Mumps (Parotitis).

Contagious and epidemic. Acute inflammation of the parotid, submaxillary or sublingual glands. Infection may be absorbed and attack other organs in the body as testicles, ovaries or breast.

Cause: No doubt a germ, but it has not been discovered. One attack usually gives immunity.

Incubation Period: Two to three weeks.

How Conveyed: Close association with patient by coughing, sneezing and spitting. Not often on things.

How to Avoid: Isolate the patient 10 days or two weeks and isolate contacts for three weeks. No general disinfection required.

Whooping Cough (Pertussis).

An acute infectious, epidemic disease, characterized by catarrhal condition of the bronchial tubes; spasmodic cough, accompanied by a whooping sound. One attack gives immunity.

Cause: A germ (Bordet-Gengou) found in the secretions from the air passages and in the mouth discharges.

Incubation Period: Seven to ten days.

How Conveyed: By association with a person having whooping cough, through coughing, sneezing and spitting. It is a child's disease but adults may have the disease when exposed to it if they escape it in childhood.

How to Avoid: Isolate the patient for six weeks—or more. Isolate susceptible contacts for two weeks.

Whooping cough and measles each killed more than scarlet fever last year in Chicago. It is a crime to expose children to these diseases as is often done by ignorant mothers. Most deaths from these two baby killers occur in children under two years of age. Death is rare from these diseases after five years of age. Keep children from these diseases as long as possible.

Venereal Diseases.

Chancroid (Contagious).

An eating sore, usually more than one present. Buboes or swelling of the glands in the groin often results. The disease is local and comes on one to ten days after contact with a person having the disease.

Cause: A germ, the Ducrey-Unna Bacillus.

Incubation Period: One to ten days.

How Conveyed: By contact. It is contracted almost exclusively by sexual intercourse. It can be contracted by contact with any part of the body if the skin is broken, but it is usually located on the genitals.

How to Avoid: Do not come in contact with a person thus infected. In dressing such an ulcer, rubber gloves should be worn. Soiled cloths should be burned.

Syphilis (Contagious and infectious).

The local sore is called a chancre. The sore is usually single and comes on ten to thirty days after contact with a diseased person or something that has been contaminated recently by syphilitic infection. The disease is hereditary. For descriptive purpose we divide the symptoms into three stages:

Primary: The beginning sore.

Secondary: Eruption on the body and in the mouth and throat, loss of hair, etc.

Tertiary: When the disease attacks bones, internal organs, brain and nerves.

Cause A protozoan (Treponema Pallidum Schaudinn).

Incubation Period: Ten to thirty days. Usually within three weeks.

How Conveyed: By contact; usually by sexual intercourses; often by kissing, and can be transmitted by recently infected articles, such as instruments, drinking glasses, etc. If a person has a cold sore on the lip or a break in the mucous membrane on the lip when kissed by a person having syphilitic mucous patches in the mouth he will almost certainly contract syphilis. Under similar conditions a pipe, a pencil or a drinking glass that has been in the mouth of a syphilitic person can convey the disease. It is possible to contract the disease from freshly infected cloths or clothing coming in contact with a break in the skin. But if a person never touches a syphilitic person the chances of getting the disease from other sources are very slight, indeed.

How to Avoid: Avoid contact with persons infected with syphilis. Every man and woman before marriage should be examined and furnished a certificate of health from a family physician and from a health officer.

Gonorrhea.

An acute contagious disease characterized by inflammation of the passage of the bladder, discharge of pus, pain and burning sensation in passing urine and sometimes frequent desire to urinate. There are many painful complications. It kills its thousands, but the death certificate seldom shows the real cause of death.

It also occurs as an infection of the eyes of the new-born baby. This is a frequent cause of blindness.

Cause: A germ, the diplococcus of Neisser. It will attack any mucous membrane such as the eye, mouth, anus or urinary passages. The latter is most often the seat of the disease.

Incubation Period: Twenty-four hours to four days.

How Conveyed: By contact with a person who has the disease. Impure sexual intercourse is the usual method of transmission. It is conveyed to new-born babies' eyes in the vaginal discharges of the mother. It can be conveyed on things, as a soiled handkerchief to the eyes, or soiled hands may convey the disease.

How to Avoid: A certificate of health from a physician and from a health officer required before marriage would be the best safeguard. Some persons never recover and become chronic carriers of the infection. Such persons should never marry.

For the good of the human race, no syphilitic should be allowed to marry, though many are no doubt cured. Many are never cured and bring into the world diseased children. A person with a chronic gonorrhea should never marry or in any way expose another to his or her infection. A person with an acute gonorrhea who endangers another is no better than a brute. Such a person should be segregated and quarantined until cured and free from infection.

LESSON 22.

CONTAGIOUS DISEASES-Continued.

Typhoid Fever.

A contagious, infectious and epidemic disease. It is a filth disease, contracted by swallowing in some way discharges from the bowels or bladder of a typhoid patient. The disease is entirely preventable if we apply what knowledge we have at the present time. Chicago has the lowest death rate of any large city; only 37 deaths from the disease occurred in 1918, and 31 in 1919. Armies are practically free from typhoid as a result of general vaccination against typhoid and protection of food and water against typhoid contamination.

Cause: A germ-bacillus typhosus. This causes ulcers in the intestines. The germ also enters the blood.

Incubation Period: Eight to fourteen days; sometimes three weeks.

How Conveyed: In milk and other foods; in water; by hand to mouth infection; by kissing; and by carriers. Carriers are persons who have typhoid bacilli in their intestines, but do not have typhoid fever. Some carriers have had typhoid fever; others have not had the disease, or have had it in so mild a form that it was not recognized as such. The only way to detect a typhoid carrier is by laboratory tests. A recovered case of typhoid fever may harbor the germs and excrete the same in the stools and urine, and thus transmit the infection to others.

How to Avoid: Vaccinate against typhoid. Pasteurize the milk. Chlorinate the water supply. Control carriers of typhoid bacilli. They must be taught cleanliness and prohibited from handling or preparing food for others than themselves.

The typhoid patient must be isolated in a room screened against flies. Whenever possible the patient should be treated in a hospital. No one but the doctor and attendant is allowed in the patient's room. Everything must be disinfected before taken out of the room—even the bath water and remnants of food. The nurse and other contacts must be vaccinated against typhoid fever. The patient is released from quarantine only after the bowel and bladder discharges are found free from bacilli by laboratory examination.

The onset of typhoid is usually slow. There is a loss of appetite, coated tongue, usually constipation, though sometimes diarrhea, headache, malaise, enlarged spleen and sometimes nose-bleed, chilliness and fever. The fever is slight in the morning and by evening increases a degree or more. In the beginning, it usually ranges from 101 in the morning to 102 or 103 in the evening. There is some dullness of comprehension. Occasionally these symptoms develop suddenly but usually they become gradually more pronounced for a week or two weeks before the patient takes to bed. A Widal test is not reliable before the tenth day.

Summer Diarrhea of Infants (Cholera Infantum).

From the nurse's standpoint this is the most important

of bowel diseases. It causes more deaths among babies than any one disease. There is pain in the bowels, vomiting and diarrhea. Fever is present and sometimes the dysentery is accompanied by the passage of mucus and blood. It is a catarrhal condition of the large intenstine. There are two forms of dysentery, amebic or tropical dysentery, and bacillary.

Cause: Numerous. Usually infection of some kind; bacterial infection by dirty milk; unclean feeding bottles; long tube on feeding bottle becomes dirty and infects intestines. Hot weather and overdressing the child cause overheating and prevent or impair digestion of good food which may act as a poison to the child. Simple dysentery is produced in the same way.

To Prevent: Put as little clothing as possible on the baby in the summer time. In very hot weather it is sometimes well to limit the clothing to a light band about the bowels. Feed pasteurized milk in smaller quantities during hot days. If diarrhea comes on, stop the milk and give water, barley water and perhaps a dose of castor oil, until the doctor is called. Do nothing to prevent vomiting and discharges from bowels, as this is the natural way of getting rid of injurious substances in the bowels.

Parasitic Diseases.

Malaria (Ague, Chills and Fever).

Very prevalent among the early settlers in and about Chicago. Still prevalent in the South and in Italy. Infectious but not contagious. Transmitted indirectly by a bite from a mosquito that has bitten a person sick with malaria.

Cause: A one-cell animal micro-organism—a Protozoa (Plasmodium malariae).

How Conveyed: Mosquitoes do not cause the disease but carry the germ from a malarial patient to the well. The anopheles mosquito must bite a patient having malaria and then bite a well person to convey the disease.

How to Avoid: Destroy all breeding places for mosquitoes by draining or use of oil. Allow no bottles or tin cans or any barrels, tubs or pails to stand about to catch rain. One can filled with stagnant water will furnish mosquitoes for a whole block. Screen malaria patients so mosquitoes cannot become infected by biting an infected person.

Yellow Fever.

Infectious and epidemic but not contagious. Transmitted by the bite of a mosquito infected by biting a patient suffering from yellow fever. The disease is nearly extinct as a result of the discovery in 1890 that the mosquito disseminated the disease.

Cause: A germ no doubt, but it has not been discovered positively.

Mode of Transmission: By the bite of a mosquito (Stegomyia Fasciata) that has bitten a yellow fever patient.

How to Avoid: Destroy breeding places of mosquitoes by drainage or cover open water breeding places with oil and screen existing cases, the same as for malaria.

Chickenpox (Varicella).

Acute contagious, epidemic disease. Child's disease though adults have the disease when exposed to it, if they

escape it in childhood. Comes on two weeks after exposure without chill or fever. Adults may have slight fever for a day. First thing noticed is an eruption or breaking out on the skin, more on the body than on the limbs. The vesicles resemble small blisters and can be found in the hair, in the mouth and throat and sometimes on palms of the hands and soles of the feet. There are succeeding crops, so we find side by side vesicles, pustules and scabs. The fever is most noticeable when the eruption is well out. Some cases are so mild as to have no fever.

Cause: No doubt a germ but it has not been discovered.

Incubation Period: Ten to fifteen days.

How Conveyed: By close association with a patient, but sometimes on things.

How to Avoid: Isolate the patient until the scabs are all off and skin smooth—ten days or two weeks. Isolate susceptible contacts for two weeks from date of exposure. The nurse will probably have the disease if susceptible.

Smallpox (Variola).

A contagious, epidemic disease of great historic interest. Begins ten to fourteen days after exposure to smallpox, with a chill or chilly feeling for half a day, followed by fever, headache, backache, nausea or vomiting, coated tongue, foul breath, sometimes delirium. A child may have a convulsion instead of a chill. These painful symptoms which lasts until the scaling begis.

The eruption then appears, first on face, in the

throat and on the hands; the eruption is more profuse on the exposed parts than on the body. On the evening of the third or morning of the fourth day, the fever and all painful symptoms disappear as the eruption comes out.

The eruption is first papular, then vesicular, then pustular and lastly scabs. The changes from papule to scabs require ten to twelve days. In fourteen to twenty-one days the scabs fall off and leave a discoloration which lasts for months. As the vesicles turn pustular, a secondary fever comes on last for three days.

Varieties:

Smallpox without eruption.

Discrete—But few eruptions.

Confluent—Pustules run together.

Confluent pustular hemorrhagic—hemorrhage into the pustules.

True hemorrhagic—no eruption but bleeding from mouth, nose, under and into the skin and from all the openings of the body. The small blood vessels give way and bleeding result.

Cause: Supposed to be an animal micro-organism (Protozoa) but not certainly known.

Incubation Period: Nine to fifteen days; oftenest twelve days.

How Conveyed: From person to person, by close association. The disease can be contracted by talking with a patient in a room or the open air. The infection is carried on things when freshly contaminated. This disease is conveyed on things more frequently than is the case in other contagious diseases.

PROOF THAT VACCINATION PROTECTS

Brothers and sister mingle while one has smallpox. The brother with smallpox never was vaccinated. The vaccinated children did not take smallpox.

From "Acute Contagious Diseases," by Drs. Welch and Schamburg.
Published by Lea Brothers, Philadelphia.

FIGURE 35.

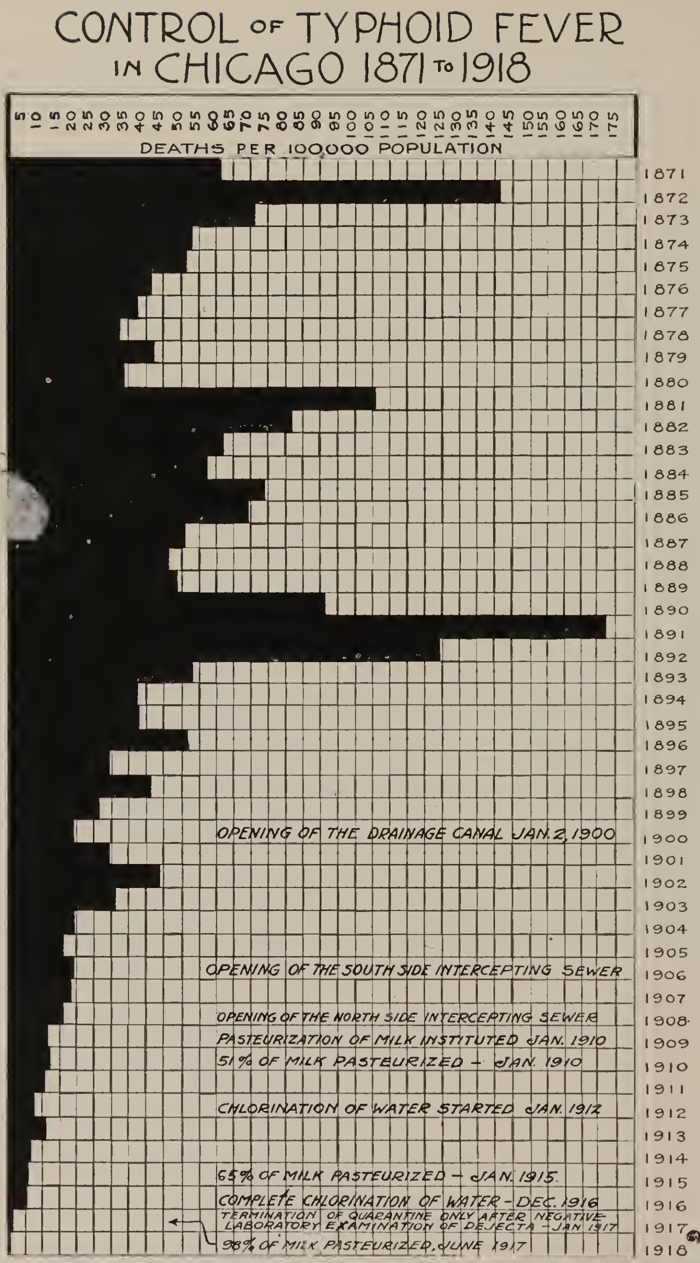


Chart shows reduction in typhoid fever to the lowest point reached by any large city in the world.

Figure 36.

How to Avoid: Smallpox can be called the fool's disease or the optional disease, for everyone can avoid it. If they have it, it is of their own choice. Vaccination with revaccination is an absolute preventive. Vaccination is a simple and harmless procedure when properly done

The patient is isolated in a hospital. No one is allowed to enter or leave the hospital except the doctor. The nurse and persons who have been in contact must be vaccinated. All infection must be destroyed with a disinfecting solution or by burning. Those in contact with a patient, unless vaccinated, are also quarantined and watched for 18 days.

Impetigo Contagiosa (Contagious).

An acute inflammation of skin, causing vesicles or blisters in which pus soon appears. These break and dry, forming large sores and scabs.

Cause: Germs of various kinds, probably streptococcus and staphylococcus as these are found in the sores constantly.

How Conveyed: By contact from person to person and from one part of the body to another on some person.

How to Avoid: Avoid contact with the sores. Clean the sores and dress them with an antiseptic salve and apply gauze dressing.

Dysentery (Amebic or tropical and Bacillary dysentery).

Infections: Both varieties caused by a parasite. The tropical by an ameba, and the bacillary by a bacillus. An inflammation of the lower bowel, causing frequent stools,

straining, blood and mucus, pain in abdomen. The microscope is necessary to determine which parasite causes the disease, as the symptoms are similar, though the bacillary form has a more acute onset. Camp dysentery, or amebic dysentry, tends to become chronic.

Cause: Protozoa Ameba coli (Bacillus Shiga).

How Conveyed: In water or milk. Can be conveyed by hand to mouth.

How to Avoid: Keep hands clean, pasteurize milk, and chlorinate water.

Typhoid Dangers at Summer Resorts

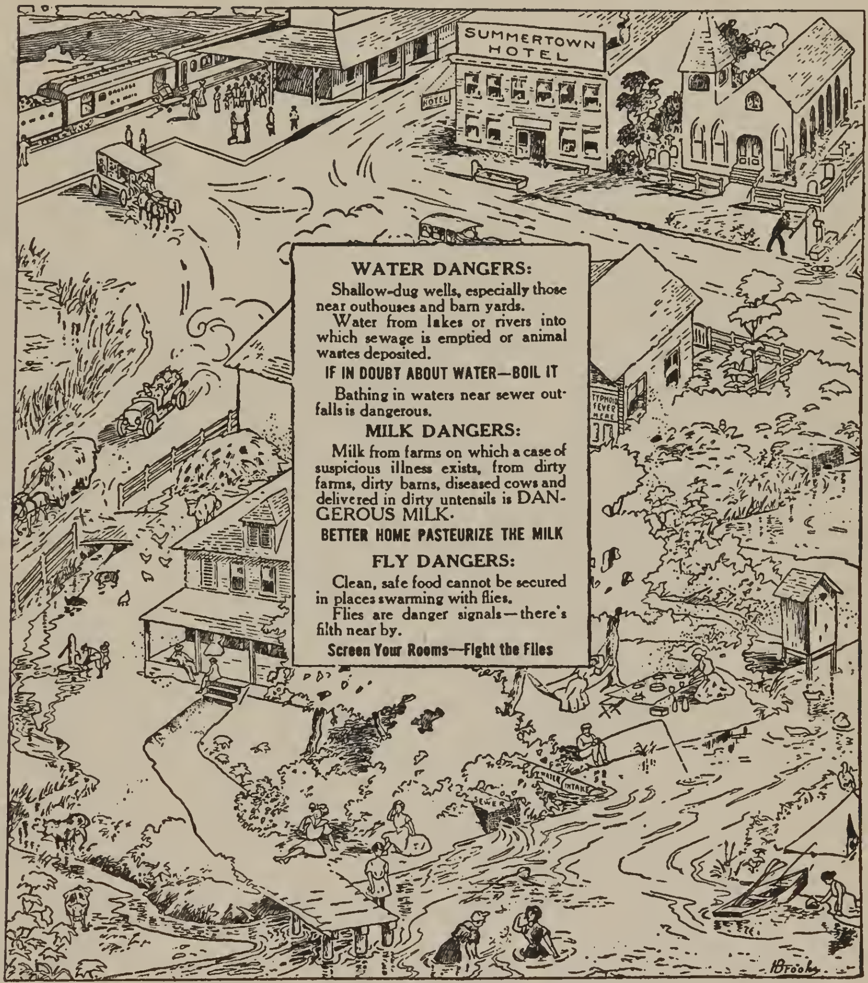


FIGURE 37,

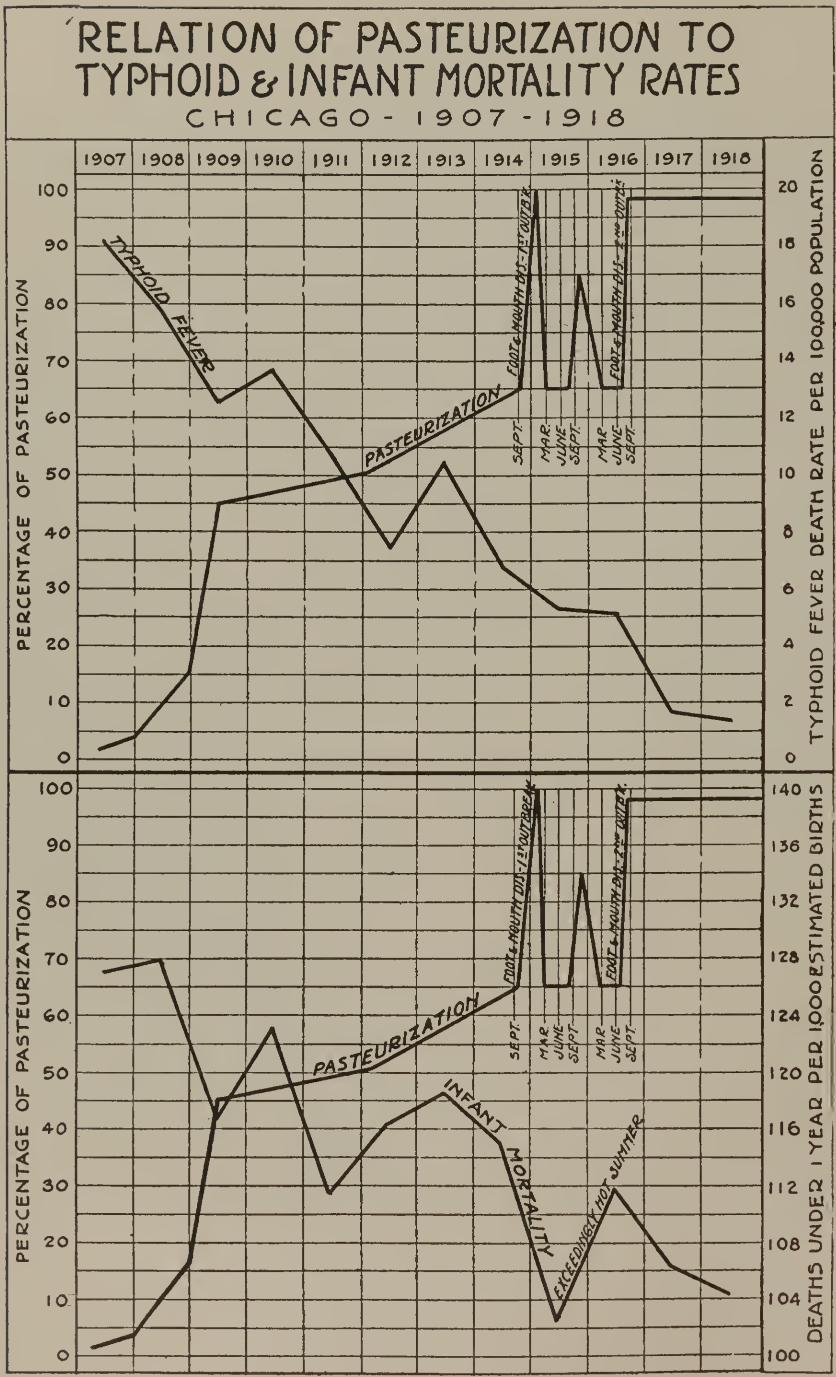

RELATION OF PASTEURIZATION TO
TYPHOID & INFANT MORTALITY RATES
CHICAGO - 1907 - 1918
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
PERCENTAGE OF PASTEURIZATION
TYPHOID FEVER DEATH RATE PER 100,000 POPULATION
TYPHOID FEVER
PASTEURIZATION
SEPT.
MAR.
JUNE
SEPT.
MAR.
JUNE
SEPT.
DEATHS UNDER 1 YEAR PER 1,000 ESTIMATED BIRTHS
INFANT MORTALITY
EXCEEDINGLY HOT SUMMER

FIGURE 38.

LESSON 23.

PRINCIPLES OF CONTAGIOUS DISEASE NURSING.

The nursing technic as practiced in the care of contagious diseases is based on the modern conviction that nearly all contagious diseases are acquired through direct or indirect contact. Therefore, since the hands are the most common medium of carrying the infection, the most oft repeated slogan for nurses in the contagious disease sick room is "Do not carry infection on your hands to others or to yourself". This can be prevented by washing and disinfection.

Going on Duty.

When going on duty the nurse proceeds first to a room adjoining the sick room and changes the street uniform she is wearing for the gown to be worn in the patient's room. She also puts on a cap that entirely covers her hair, and if she is going to work directly over the patient she also puts on a mask. These sick room uniforms should preferably consist of white muslin coverall aprons with short sleeves.

Leaving the Sick Room.

When going off duty the nurse leaves her duty uniform in the sick room, washes her face, washes and disinfects her hands and arms, and then goes to the dressing room and puts on her house uniform.

To carry out this technic it is necessary that the nurse should be supplied with two dresses, several caps and masks, and a piece of muslin or cap used to cover

the hair. The street dress is kept outside of the door and the dress worn while taking care of the patient left outside of the sick room. With this system a nurse can go out for a walk each day with no danger of carrying contagion and can safely go to the dining room for her meals.

Room Equipment Necessary for Contagious Case in a Private Home.

Everything but absolute necessities should be removed from a room to be occupied by a contagious case. Washable furniture is preferable. An iron or enameled bed, a white enameled table or a table covered with white oilcloth, and a chair constitute the essential furniture.

Washable rag rugs are best ; if washable rugs are not available use the bare floor. If curtains are left up they should be washable.

Foundation blankets can be used in place of a mattress, especially if the patient is a child. The blankets should be folded to fit the size of the bed and be pinned together at the four corners with blanket safety pins. Then fold and pin a sheet over the blankets very snugly and make the bed as a regular hospital bed. There should be a wash stand equipped with water basin, green soap, if possible, antiseptic solution, towels, nail-brush and orange-wood stick. A basin should be on hand for bathing the patient, and a receptacle of some kind for an antiseptic solution to be used for soaking soiled linen. A child's bath-tub is well adapted for this purpose.

A jar with a 50 per cent. solution of alcohol

for the thermometer is also essential. A shade of some sort to shut out light is usually necessary. A bedpan and toilet articles, such as a brush and comb, tooth brush, tooth paste, drinking cup, are also required.

The drugs needed besides the doctor's prescriptions will be a can of chlorid of lime, a bottle of alcohol, some lysol or other disinfectant, a throat gargle of some sort, camphor ice or some healing salve for the lips, and talcum powder. A supply of paper bags for disposing of waste should be on hand; if not available then old newspapers will do.

A cupboard should be placed just outside the room where clean linen supplies can be kept. A clean gown and cap should be hung just outside the door for the doctor to put on before coming into the room.

Laundry Technic.

In the case of actively contagious diseases the bed linen, gowns of the patient, towels and other laundry should be immersed in a disinfecting solution, such as a five per cent. carbolic, or ten per cent. Liquor cresolis compositus, for an hour before removal from the sick room. In the less actively contagious diseases, such as tuberculosis and typhoid fever, the soiled linen can be tied in a clean sheet and taken to the basement, where it is immersed in a boiling solution of soap-suds and then safely washed by anyone after being boiled for half an hour.

Disinfection of Dishes, Utensils, etc.

Dishes taken out of the sick room should first be

sterilized. This is best done by first removing scraps of food and then boiling for fifteen minutes. The food scraps left on the tray and dishes are received in paper bags which are taken to the furnace. Consequently the nurse should never put more of anything on the patient's tray than he is likely to eat. Cups, basins, urinals, bedpans, etc., are disinfected by washing with soap and water and boiling for fifteen minutes whenever considered necessary.

Paper bags pinned to the bed may also be used for receiving directly any pieces of gauze used for mouth and nose excretions, and for tongue depressors, throat swabs, dressings, etc. In this way none of the discarded material needs to be touched by the hands of the attendant. A supply of paper bags is very useful in home nursing for the reception of all kinds of infected material which can be burned. Newspapers pinned in the shape of a receptacle can be improvised if bags are not available.

Releasing Patients from Quarantine.

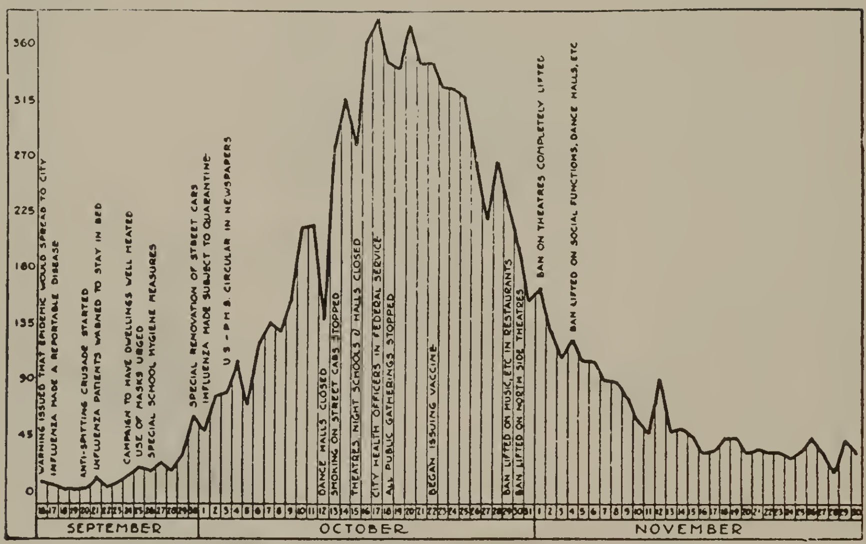
In releasing a patient from quarantine the nurse puts on a clean gown, wraps the patient in a clean sheet and conducts him to the bath room where she spreads the sheet on the floor, uninfected side down. The patient stands on this sheet and removes his clothing; then gets into the tub. The nurse then gathers up the sheet with the clothing inside and puts it in the laundry can. After the patient has been scrubbed and shampooed with green

soap he is given an alcohol rub and is then ready for dressing and release from quarantine.

New means of disinfecting are constantly being discovered; consequently anyone nursing a case of contagious disease should consult the doctor or the Health Department.

Chicago Department of Health · Cat No. 322 · Designed by Arthur M. Corwin, A.M., M.D.

FIGURE 39.



Daily Deaths from Influenza and Pneumonia, and Principal Preventive Measures taken During Course of Influenza Epidemic.

FIGURE 40.

LESSON 24.

NURSING CARE OF INFLUENZA PATIENTS.

Influenza is an actively contagious epidemic disease, spreading rapidly and attacking large numbers of people. It is characterized by an infection of the respiratory tract, fever, a marked prostration, and a tendency to the development of pneumonia as a complication.

The influenza bacillus (Pfeiffer) has been considered as the cause of the disease, but it is probable that other bacteria also play a role in the development of the malady and its complications.

Influenza occurs at irregular intervals as a pandemic, i. e., as a disease occurring over a widespread area. Five such visitations have occurred during the last hundred years, and sixteen authentic outbreaks have been recorded previous to that period.

Following such pandemics, influenza usually recurs in endemic or epidemic form for a number of years. Such local outbreaks followed the pandemic of 1889-1890 for a period of three years. In Chicago high death rates from influenza and related diseases of the lungs occurred in March and April, 1891; January and February, 1892, and in February and May, 1893, following the first outbreak in January, 1890.

The first pronounced recurrence after the pandemic of October, 1918, was a widespread epidemic of the disease in this country, reaching Chicago, in January, 1919. There is every reason to believe that additional epidemics of the disease will follow this first recurrence.

In the interval between pandemics and epidemics isolated cases of the disease always occur in varying numbers.

Symptoms.

The disease usually develops within two or three days after exposure to infection. The symptoms are extremely variable but fever and catarrhal symptoms of the respiratory tract, such as running nose, sore throat, tonsillitis, bronchitis, with the resultant sneezing and coughing, occur in the majority of cases. The onset is usually sudden, with chilliness followed by fever, headache, intense general pain, especially in the back and joints, and marked prostration. These general symptoms are usually much more severe than in ordinary "colds".

The temperatue rises to 103 or 104 degrees and lasts only from one to four days, or less than a week, if complications do not set in. The most common complications and the most frequent cause of death is broncho-pneumonia. This often begins insidiously without a chill and is characterized by shortness of breath and increased coughing and expectoration.

In some cases the nervous symptoms predominate the headache and general or neuralgic pains are severe. Sometimes a violent delirium occurs.

Precautions Necessary to Prevent the Spread of Influenza.

The nurse in caring for a case of influenza has a two-fold duty, namely, the care of the patient and preventing the spread of the disease to others, including herself. Every case of influenza should be looked upon as contagious. The

very nature of the disease points to the secretions of the respiratory tract as the potential source of infection. Therefore, the utmost care must be taken in the disposition of the sputum and the care of handkerchiefs, linen, clothing and other articles upon which secretions of the nose, mouth, bronchi and lungs have been deposited. The nurse should ever bear in mind that innumerable tiny, invisible droplets of such secretions, carrying the infection, are expelled during every act of talking, coughing and sneezing, and also that infection is imparted by means of the mouth secretions to spoons, knives, forks and other utensils used by the patient.

The patient should cover his mouth while coughing, using a gauze or paper napkin. A supply of these should be kept pinned to the bed within reach of the patient. When used, they should be put in paper bags and burned. In the case of a very weak patient, coughing a great deal, a towel may be placed over the bedding near the patient's face. This should be changed frequently and be immersed in a disinfecting solution before being sent to the laundry.

After each meal all uneaten food should be scraped from the dishes, wrapped in a newspaper and burned. The dishes and utensils should be immersed in water and boiled. Then they may be returned to the kitchen of the house.

On account of the manner of spreading the disease it is self-evident that the hands of the patient and of the attendant or nurse may be the means of transmitting the infection.

From the foregoing facts it is evident that the only means of preventing the spread of infection from a given case of the disease is the isolation of the patient. Therefore, it is the practice of the Chicago Department of Health to enforce the following rules in the isolation of persons suffering from influenza:

"Any person having influenza shall be confined to a large, well-ventilated room of proper temperature, as remote from other occupants of the premises as is practicable and necessary to avoid contact.

"The period of isolation shall continue during the course of the disease and until all clinical manifestations of the disease have disappeared and the temperature has been normal for five successive days.

"None other than the necessary medical and nursing attendants shall enter the sick room or come in contact with the patient. The attendant should wear a face mask of gauze or other approved material when in attendance on the patient.

"All discharge from the respiratory tract, mouth, throat and nose of the patient shall be received in cloths which shall be burned immediately after using, or in vessels containing an approved disinfecting solution.

"Soiled body and bed clothing shall be disinfected by boiling or by immersion in an approved disinfecting solution. Any article used by the patient or attendants, such as knives, forks, spoons, glasses, cups, plates, etc., must be disinfected before leaving the sick room. Floors, furniture and woodwork should be wiped up daily with an approved disinfecting solution.

"When the foregoing precautions are properly observed, other occupants of the premises who show no evidence of illness need not be confined to the premises. It is recommended, however, that persons residing on premises on which a case of influenza exists should refrain so far as possible from attending public gatherings and avoid unnecessary contact with other persons. Visiting on such premises is strictly prohibited.

"Milk bottles must not be taken into patient's room, and must be boiled by family before returning to milkman.

"The premises will not be placarded unless the family refuses to comply or fails to comply with above requirements.

"When the case is fully recovered the patient must be given a bath and clean clothes.

"The family must thoroughly boil the bed linen, and other articles in the room occupied by the patient which can be boiled without injury, and must thoroughly scrub woodwork, floors, etc., and air and sun the room before permitting it to be occupied again."

Nursing Care of the Patient.

Persons suffering with influenza should be under the care of a physician. Even the mildest cases may develop serious complications and the vagaries of the disease are such that serious developments may occur unexpectedly at any time. Relapses and complications may occur after the acute symptoms and fever have subsided.

It is very essential that a person sick or suspected of being sick with influenza should be confined in a room at once and go to bed. This will prevent complications and also help to prevent the spread of the disease.

The room should be well ventilated, free from dust, and be abundantly supplied with sunlight. It is a well-known fact that persons suffering from the catarrhal symptoms of influenza experience ill effects from drafts and cold. Therefore, the room temperature must not be allowed to fall below 68 degrees Fahrenheit and drafts must be avoided by obtaining the necessary supply of fresh air when possible through windows open in adjoining, unoccupied rooms. If this is impossible then windows must be opened from the top, or the air must be deflected by window boards, as explained in a previous lesson.

At the onset, when the patient complains of

chills, he may be given a drink of hot lemonade, be well covered with warmed blankets, and have hot water bottles placed at his feet.

Baths for fever should be given under the physician's directions. As a rule, influenza patients are very susceptible to cold applications; therefore, warm sponge baths will be found less disturbing and hot applications most advantageous for the relief of pain.

Chilling the patient should always be avoided. The windows should be closed when changing the gown of the patient or when doing anything which involves his exposure.

The diet should be light and easily digestible, such as milk, milk toast, eggs and gruels. Water should be given freely. Hot drinks may also be given and are often provocative of good results.

Medicines should only be given under the physician's directions. Many of the remedies commonly taken for "colds" or headaches, which are the usual symptoms of influenza, contain coal-tar derivatives which are depressing and therefore may do great harm if the patient should have an attack of pneumonia or a weakened heart, as is often the case in influenza.

Similarly, the narcotics, like opium, morphin and codein are usually injurious in diseases of the lung; hence cough syrups or other remedies containing the same should never be given unless ordered by the physician in attendance on the case.

Alcohol tends to increase the headache and should be avoided unless ordered by a physician.

Complications.

The nurse must be on the lookout for complications and must see to it that the physician is notified when symptoms develop indicating their occurrence.

The most common complication is broncho-pneumonia. This occurs in from five to eight per cent. of the cases. Pneumonia, complicating influenza, usually begins without a chill, but with increased cough, expectoration and shortness of breath. The temperature may be only slightly more elevated. It seldom sets in before the fourth day of the illness. A recurrence of temperature after it has reached normal is suggestive of pneumonia.

The development of pneumonia makes the outcome of the case more uncertain since the death rate in this form of pneumonia is very high; in uncomplicated influenza few die compared with the number attacked, while in influenzal pneumonia the death rate reaches fom 20 to 50 per cent.

It is for this reason that the most careful attention must be given to every case of influenza, because even the mildest may develop this serious complication, especially if neglected or not cared for properly. Even during convalescence pneumonia may occur if the patient leaves his bed too early or gets chilled.

With the supervention of pneumonia rest in bed must be enforced absolutely. The patient must be spared every

effort and his wants anticipated as much as possible. Sometimes a strain on the heart, caused by any unusual effort of the patient, such as a sudden change from the reclining to a sitting or standing position, may prove fatal. If the patient finds it easier to breathe if propped up by several pillows this may be allowed, but the change must not be made suddenly.

It is now more important than ever that an ample supply of fresh air shall be admitted into the sick room. Every additional person in the room deprives the patient of a part of the air supply, especially if the room is small. For this reason, other members of the family must not be allowed to congregate in the sick room.

The nurse must be attentive to every want of the patient. Severe pain in the chest, due to an accompanying pleurisy, may give the patient a great deal of distress, and make breathing painful and difficult. This should be reported to the physician in attendance. In an emergency local applications of turpentine and lard or camphorated oil may be applied. Poultices, mustard plasters, hot applications, ice bags, strappings and binders should be applied only under a physician's directions.

High fever may be relieved by sponging with tepid water, but chilling of the patient must be avoided. Cold baths are poorly tolerated by influenza patients. If headache is excessive cold cloths or an ice bag may be applied to the head.

Actively delirious patients may require restraint,

which must be carried out under a physician's directions. In an emergency the nurse should summon a member of the family who, after being properly masked, may assist in keeping the patient in bed. Severe nervous symptoms are sometimes relieved by warm baths.

Miscarriage is a complication which may occur when the patient is pregnant. The nurse should note the signs of its occurrence, such as uterine hemorrhage, and at once report the same to the attending physician. In the meantime the patient must be kept absolutely quiet and in bed.

Children, although more rarely affected with influenza than adults, may develop middle ear disease as a complication. This is characterized by restlessness, tossing of the head, putting the hand to the affected ear and later, by a discharge. These symptoms, when noted, should be reported promptly to the physician in charge of the case. In an emergency a hot water bag may be applied to relieve the pain.

Convalescence.

Great care is necessary during convalescence. A relapse or complication may follow too early leaving of the bed or resumption of duties. Patients continuing to have cough and expectoration may be the source of spreading the infection when allowed to mingle with the public.

It is the duty of the nurse to impress these facts upon the patient and see that he takes proper care of himself until complete health returns. A nutritious diet

and an abundance of fresh air will hasten recovery. Chills, exposure and over-exertion should be avoided.

Protection of Nurses' Health.

Nurses caring for influenza patients should take the necessary precautions to prevent contracting the disease themselves. To this end they should always bear in mind the manner of transmitting the disease. Inasmuch as infection takes place through the respiratory tract, from droplets and germs expelled by the patient, it behooves the nurse in attendance to guard herself against the inhalation of infection by wearing a gauze mask over her nose and mouth. Such a mask is made with from four to six layers of gauze or buttercloth (30-40 mesh), measuring approximately six by eight inches, with tapes at the two ends for tying over the head.

Masks should be changed whenever moist and at least every three or four hours. If the mask becomes infected by a severe coughing spell of the patient, it should be changed at once and the face washed with soap and water. It is preferable that a supply of fresh, clean masks be on hand, but where this cannot be done they may be boiled for ten minutes, dried and used again. The supply of clean masks should be kept in a carton or wrapped in clean paper and not exposed in the sick room before using.

The nurse, in order to avoid infection, must pay especial attention to her hands. There are innumerable and many unavoidable sources of infecting the same. Of course the nurse should be conscious whenever necessity arises

for removing her mask or leaving the sick room. Washing with soap and water and immersion in a simple disinfecting solution are the means to be depended upon for disinfection of the hands.

The other precautions for avoidance of infection, already enumerated in the previous lessons on contagious disease nursing, should not be neglected. The nurse must ever bear in mind that in guarding against disease the body should be kept strong. Therefore, it is important that she go out into the fresh air every day. To make this possible she must take the necessary precautions to protect her dress and hair from infection while in the sick room.

In taking her airing the nurse should be careful not to get chilled. If the fresh air treatment is used in the patient's bedroom the nurse should wear a sweater under her gown, being careful to protect the sleeves of the same with paper cuffs.

The nurse should not sleep in the patient's bedroom. When this is absolutely necessary she should see to it that the ventilation is adequate for two persons.

A person who has had the disease is not likely to contract it again in the near future. Persons past middle age are also more or less immune to infection.

The danger of pneumonia can be mitigated by vaccination with anti-pneumococcic vaccine. This procedure, although not a preventive against an attack of influenza, offers a certain protection against pneumonia and pneumococcus infection, which are the usual causes of severe illness

and death. Recently a lipo-vaccine has been introduced which can be given in one injection.

Therefore, it is recommended that nurses not partly immune on account of age or a previous attack, expecting to engage in the case of influenza patients should be protected by vaccination. But under no circumstances should vaccination be relied upon entirely for protection. The other precautions heretofore enumerated must still be followed. This applies also to persons who have had a previous attack because the whole question of immunity in influenza is still enveloped in uncertainty at the present time.

LESSON 25.

NURSING CARE OF PATIENTS SUFFERING FROM TUBERCULOSIS.

The nurse's chief duty in taking care of a case of tuberculosis is to prevent the disease from spreading to other members of the patient's family, or of his community. In order to do this it is necessary that she should know something of the history of the disease.

Tuberculosis, commonly known as consumption, is a contagious disease caused by the tubercle bacillus. This bacillus may grow in any part of the body except the hair, the nails, and the teeth. You may, therefore, have tuberculosis of the bone, tuberculosis of the eye, tuberculosis of the brain and nerves, usually called cerebrospinal meningitis, tuberculosis of the lungs, etc.

When children have the disease, it is usually in the glands of the neck, in the bones, in the joints, or in the serous membrane. Lung tuberculosis develops usually between the ages of fifteen and forty.

Manner of Infection.

For many years it was generally believed that tuberculosis was hereditary. This, however, has never been proven to be true. We do know that the germ of the disease enters the body in three ways, – by inoculation, by inhalation, and by ingestion.

If one cuts one's finger germs may get into the cut and so enter the body. In this manner one would get the disease by means of inoculation.

The common means of getting the disease is by

inhalation, – that is, by breathing in the germs in dust-laden air.

Patients harboring tubercle bacilli in their lungs and bronchi will expel the same, not only in the visible secretions, namely, the sputum, but also in connection with innumerable, tiny, invisible droplets of mucus, which are expelled in every act of talking, coughing and sneezing. They carry the tubercle bacilli into the air from whence they are inhaled by persons coming into the zone in which they are expelled. Dust taken from the homes of tuberculous patients in Chicago has killed guinea pigs in the laboratories.

In the third method of infection, ingestion, the tubercle bacillus is on or in the food we eat. Formerly milk was a great carrier of tubercle bacilli in this city, but now that the milk is all pasteurized there is little danger from this source.

Symptoms.

There is no other disease that has so great a variety of symptoms. There may, in fact, be no symptoms at all, and yet the person may have tuberculosis.

If a person has frequent and protracted colds, – colds that are hard to get rid of and that return as soon as one is rid of them – tuberculosis should be suspected. If a person is anemic, thin, and easily tired, he should be examined for tuberculosis. If there is a slight, persistent hoarseness, or a persistent cough, tuberculosis should be suspected. A person in apparently good health who feels a little tired in the afternoons and finds that his tempera-

ture is a little above normal, should be examined for tuberculosis.

Tuberculosis is easily cured in its early stages, but is difficult to cure in the advanced stage. Therefore, anyone that suspects the presence of the disease in himself should consult a doctor at once.

General Management of Cases.

In Chicago everybody is supposed to report a case of tuberculosis, or a suspected case of the disease, to the Health Department. This is because the disease is very infectious, and it is extremely dangerous to children, and the Health Department desires to be in a position to protect the tuberculous patient's family and neighbors from contagion.

Medicine is of no value in treating tuberculosis. The only remedies are rest, fresh air, good food, and sunshine. Anyone that buys medicine guaranteed to cure tuberculosis or cancer is wasting his money and risking his life. There is no medicine known that will cure these diseases.

When the nurse has secured the following essentials for her patient she has done all that she can for him personally. These all tend toward preventing the spread of disease, which is, by far, the greater part of her work:

(a) Isolate the patient. Have him room alone and sleep alone. It is well, for his own sake, to have him sleep out of doors, if possible.

(b) Boil and keep separate all dishes and drinking cups used by the patient.

(c) Keep the patient's mouth covered with a paper napkin while he is coughing or sneezing. Have him use paper napkins instead of handkerchiefs for his nose. Use sputum cups for receiving the sputum. If these are not at hand then use paper napkins for this purpose. Keep all these napkins in paper bags, and burn them at the end of every five or six hours.

(d) Never allow the patient to fondle or play with small children. Never allow him to kiss anybody.

(e) Infected discharges from the patient, such as the sputum, pus from tubercular abscesses, etc., should be disinfected with a five per cent. solution of carbolic acid before being disposed of.

(f) After a tuberculous patient has been removed from a room the room must be thoroughly disinfected before anyone else uses it. The floors, window-sills and walls, if washable, should be washed with germicidal solution; the patient's linen, towels, and bed linen should all be boiled, and bedding which cannot be washed must be disinfected along with the room.

To disinfect the room all openings must be closed. A clothesline should be stretched across the center of the room, and all bedding, draperies and clothing that cannot be boiled should be spread out across this line. Books that the patient may have handled should be spread out open on a table. Place a tin pail in a wash tub in the middle of the room. Into the pail put six ounces of potassium

permanganate for every one thousand cubic feet of room space. Pour over this one pint of 40 per cent. formaldehyde for every one thousand cubic feet of room space. Leave the room hastily as the gas formed is very powerful, and acts very quickly. Close the door and seal it. Leave it sealed from eight to twelve hours.

After articles in the room have been disinfected they should be hung in the sunshine for a day or two. Toys and articles of little value should be burned.

(g) In any surgical case involving a tuberculous patient, the nurse should receive all soiled dressings on newspapers and burn them. The soiled clothing of the patient and the soiled bedding should be placed upon newspapers, should be rolled up in the newspapers and should be carried at arm's length to prevent their contact with the nurse's clothing. All such clothing and bedding should be put in a disinfecting solution where they should remain until washed and boiled.

The Department of Health will be glad to send full information concerning the Municipal Tuberculosis Sanitarium and the Municipal Tuberculosis Dispensaries to anyone who cares for it.

CARE OF MOTHER AND BABY.

LESSON 26.

OBSTETRIC NURSING.

Obstetrics is the art of caring for women during pregnancy and childbirth.

Anatomy.

The pelvis in the female serves to support and protect the internal organs of generation. It is composed of four bones, namely, two innominate, the sacrum and the coccyx. The female organs of generations are divided into two groups, namely external and internal. The external organs of generation are known collectively as the vulva. The internal organs of generation comprise the vagina, uterus, Fallopian tubes and ovaries.

The vagina is a musculo-membranous canal, leading from the vulva to the uterus and lying wholly within the true pelvis.

The uterus, or womb, is a hollow, pear-shaped organ about three inches in length, one and one-half inches wide and three-quarters of an inch thick. It lies in about the center of the pelvis below the brim, with the bladder in front and the rectum behind, so that of necessity a full rectum will force it forward and a distended bladder will tilt it backward. Its function is to receive, nourish and protect the impregnated ovum.

The uterus, including the neck, is of a hard and firm consistency, but during pregnancy, becomes softened.

The uterus has two parts, the fundus and the cervix. The fundus is the upper expanded portion, and the cervix the lower or neck-like part. The latter has an opening known as the os uteri, through which are discharged two uterine secretions and the menstrual blood. It is through the os that the ovum enters the uterus, and the fetus and lochial discharges are expelled.

The uterus is suspended in the pelvis by means of the broad and round ligaments which extend from the sides of the uterus to the sides of the pelvis. They also support the Fallopian tubes and ovaries.

<u>The Fallopian tubes,</u> two in number, are trumpet-shape, with expanded and fringed outer ends. The tubes are from four to five inches in length, extending from the upper angles of the uterus just below the fundus towards the sides of the pelvis, and are supported by the broad and round ligaments.

<u>The ovaries</u> are located between the outer extremities of the Fallopian tubes and the uterus. They are the germ-producing organ of the woman and are about the size and shape of an English walnut. Each ovary contains in its substance at birth a vast number of germs or ovules.

Beginning at about the time of puberty and occurring at or about every menstrual period one, or possibly two, of these ovules enlarges, approaches the surface of the ovary and escapes into the Fallopian tubes through which it is passed on into the uterus.

The perineum is the name given to the triangular mass of tissue that separates the vagina from the rectum and anus.

The mammary glands, or breasts, are made up of glandular tissue and fat. They are divided into 15 or 20 lobes, which are separated from each other by fibrous and fatty walls and subdivided into numerous lobules. The lobules are composed of acini, in which the milk is formed. The acini open into the milk ducts, which, as they approach the nipple, are dilated to form little reservoirs in which the milk is stored. These are contracted again as they pass into the nipple.

Functions of Female Generative Organs.

The functions of the female organs of generation are ovulation, menstruation, conception, pregnancy and parturition.

Puberty is the age at which menstruation is established and coincides with the first regular liberation of ova. The changes of puberty include the development of the pelvic bones, reproductive organs and breasts; the growth of pubic and axillary hair, general rounding out of the body and maturing of the nervous system. As these changes are completed the girl develops into a woman and the child-bearing age is reached.

Ovulation is the ripening and discharge of ova. About once a month (every 28 to 30 days), one of the ova enlarges, approaches the surface of the ovary and constitutes what is known as the Graafian follicle. Then it becomes

thinned at the point where it soon bursts and allows the ovum to escape. The liberated ovum is then taken up by the fimbriated end of the Fallopian tube, by which it makes it way into the uterus where, if unimpregnated with the male element, it loses its vitality in a few days and is cast off with the menstrual flow.

Menstruation is a discharge of blood from the inner wall of the uterus and occurs from puberty until the menopause, except during pregnancy and lactation. As a rule the flow occurs every 28 days and lasts from five to seven days. The discharge consists of blood, mucus and parts of the lining of the uterus, which was prepared for the reception of the impregnated ovum.

Conception is a term used to designate the fertilization of the ovum. This usually takes place in the Fallopian tube. From there the impregnated ovum is passed on into the uterus, where it lodges in one of the folds of the mucous lining, usually in the region of the fundus.

At the beginning of pregnancy the ovum is a tiny vesicle just visible to the naked eye. In two weeks it has grown to the size of a large pea, and in four weeks it has attained the size of a walnut. At eight weeks, the surface of the ovum has acquired a distinct and separate character and consists of a protecting and nutritive part, the placenta, and the child which at this time is formed distinctly.

The placenta is the source of nutrition and the organ of respiration and excretion for the child in the uterus. It resembles a flat cake and has two surfaces, the maternal and fetal. From the fetal surface extends the umbilical cord,

by which the fetus and mother are connected. The fetal surface of the placenta is smooth and covered with a thin membrane, which forms a sac to surround the fetus. This sac is filled with a fluid called the amniotic fluid with which the child is surrounded. At the time of birth this constitutes the bag of waters, which serves to dilate the mouth of the uterus in the first stage of labor. The umbilical cord is formed about the fourth week and increases in size as pregnancy advances. It is made up of two arteries and one vein and covered with a gelatinous substance known as Wharton's Jelly.

Pregnancy includes the whole period in which the unborn child is growing from conception until the time of parturition. The duration of pregnancy is approximately 280 days.

Physiology of Pregnance.

When the impregnated ovum attaches itself to the walls of the uterus, nature at once proceeds to prepare for the development of the new life. The whole body of the mother soon feels the stimulus of the change that has begun. The digestive, secretive and excretive organs are taxed to a high degree and changes take place in the circulatory system which result in sending more blood to the uterus for nourishing the new life. The blood vessels increase in size and number.

Later in pregnancy, the clotting qualities of the blood are increased. The breasts enlarge and the pinkish areolae about the nipples of the woman, who has never borne a child, grow larger and darker until they become brown, or in some cases

almost black. The nervous system is apt to be more unstable and more easily irritated.

Signs and Symptoms of Pregnancy.

As signs of pregnancy, cessation of menstruation and morning sickness are placed first on the list.

The stoppage of the menstrual flow in an otherwise healthy woman is very suggestive of pregnancy.

Morning Vomiting.

If, in addition to cessation of menstruation there is on arising in the morning, nausea and a sudden paroxysmal emptying of the stomach, the diagnosis of pregnancy becomes more probable than ever. Under normal conditions the nausea may continue until about noon, the stomach promptly rejecting any food or drink that may be swallowed. After twelve or one o'clock the irritability of the stomach usually ceases and the patient has no further trouble until the next day, when the whole affair is repeated.

This "morning vomiting of pregnancy" begins as a rule about the end of the second month, but it may be noticed at any time after conception has occurred. It generally stops by the end of the fourth or fifth month. Vomiting occurring late in pregnancy is always regarded with suspicion.

The changes in the breasts, which are suggestive of pregnancy, are enlargement of the entire gland on both sides, a sense of fullness, shooting or tingling pains and darkening of the skin surrounding the nipples.

The size of the abdomen in pregnancy corresponds with the increase in the size of the uterus, which at the

end of the third month is on the level with the brim of the pelvis, i. e., the upper part of the pubic bones; at the end of the sixth month at the level of the umbilicus and towards the end of the ninth month, at the sternum.

Hearing the fetal heart beat is an absolutely positive sign of pregnancy. It may be heard after pregnancy has advanced four or five months.

Quickening, the first feeling of life on the part of the mother consists of a momentary fluttering sensation. Later, as the fetus develops, the active movements become more decided.

Diagnosis of Time of Confinement.

The probable date of labor may be computed by taking the first day of the last menstruation, counting back three months and adding seven days. For example, if the woman's last menstruation began June 14, count back three months to March 14 and add seven days, making March 21. She may then be told that her labor will probably take place between March 14 and 28. Remember that this is merely an approximate date, for the exact time of impregnation can seldom be determined.

Hygiene of Pregnancy.

The following are some general hygienic rules which should be observed by every pregnant woman:

1. The clothing should be loose and hang from the shoulders. No corsets or garment that constricts or compresses the chest, waist, or abdomen should be worn. The reasons for this rule are many and important. In the first

place, anything that compresses the chest retards greatly the development of the breasts, which should be unimpeded during pregnancy. Pressure on the breasts also tends to flattening or depression of the nipples, either of which will later interfere with the function of lactation.

Pressure about the waist and abdomen is injurious, in that, respiration is affected by interference with the play of the abdominal muscles and the diaphragm; circulation is impeded by the pressure on the large abdominal blood vessels and the normal action of the kidneys, liver and digestive organs is seriously hampered.

2. Exercise in the open air should be taken daily. Of all forms of exercise, walking is the best. Light housework is also a good form of exercise.

3. Bathe at frequent and stated intervals. Baths should be taken daily during the hot weather and not less than three times a week in cooler weather. Warm water and soap are to be used, in order to keep the skin in good condition and the pores open so that perspiration is not interfered with and too great a strain is not thrown on the kidneys.

4. Sleep in a greater amount than usual is required for the pregnant women, at least eight hours at night and an additional nap of one or two hours in the afternoon being necessary.

5. The teeth of the pregnant woman should receive careful attention. If possible they should be examined by a dentist and put in good condition during the early months of pregnancy. The frequent use of the tooth-brush and an

alkaline mouthwash, lessens the danger of the old saying "A tooth for every child", coming true.

The diet. No hard and fast dietary rules can be laid down for the pregnant woman. Under ordinary circumstances, beyond limiting the use of red meat to once a day, she may be allowed to choose for herself, so long as she selects only nutritious food of an easily digestible character.

The food requirements for the prospective mother are not materially affected during the first four months and even after this, when the infant is developing rapidly and up to the date of birth, the mother's requirements are only increased about 20 per cent.

The peculiar conditions surrounding the woman at this particular time must be taken into consideration. The building foods, which are necessary for the developing child, must be given in the simplest form, milk and eggs being used liberally and meat sparingly to prevent any unnecessary tax being placed upon the kidneys. The use of fruit and green vegetables to supplement the milk and eggs is urged. It has been found advisable to give small meals frequently, rather than the regular meals three times a day.

Sample diet list. BREAKFAST should consist of thoroughly cooked cereals served with cream or sugar, or both, whole wheat bread, muffins, or biscuits, with butter, raw or stewed fruit, coffee, tea, cocoa, or milk.

LUNCHEON may consist of milk or vegetable soup, eggs in any form, potatoes, string beans, greens of any kind, green vegetables, simple dessert, such as custards, rice, or

tapioca puddings, and bread pudding; milk, tea, cocoa and buttermilk as beverages.

For DINNER a small piece of meat may be taken, together with green vegetables, rice, potatoes, simple salads, etc., simple dessert, milk or coffee with cream as a beverage.

The principle point to keep in mind is the abnormal symptoms which may arise. The chief of these is albumin in the urine. When this occurs, meat is limited to one meal a day and in severe cases it may be necessary to place the patient upon a milk diet for a time until the urine clears up.

Constipation must be considered in regulating the diet, as most women are thus afflicted during pregnancy. Regular habits of going to stool at a certain hour each day, say shortly after breakfast, should be established. Drinking plenty of water, using fruits and vegetables in abundance in the diet may help to overcome it.

The kidneys are generally given special attention during pregnancy, the last two months in particular. The urine should be examined every three weeks and oftener if there is any reason to suspect trouble. The total amount of urine voided in 24 hours by a normal individual is fifty ounces.

The breasts must be prepared for nursing by careful attention to the condition and development of the nipples, for if the infant is unable to nurse, both the mother and child will suffer more or less. The breast should be

bathed night and morning with soap and warm water to keep the skin in the best possible condition.

If the nipples are small, flattened or depressed, they must be gently drawn out with the forefinger and thumb night and morning during the last two months preceding labor. All nipples, no matter how well developed and healthy they may be, are to be anointed every night with albolene or cacao-butter.

Disorders of Pregnancy.

Disorders of pregnancy are, in many instances, merely exaggerated states of those conditions already described as being in their milder forms, purely physiological. On the other hand, symptoms appear at times which must be regarded from the very moment of their onset as unnatural.

Nausea and vomiting, if occurring only in the morning and subsiding by about noon, so that during the latter part of the day the patient is able to enjoy her food and retain it, need not be a cause for alarm. In normal cases these symptoms should disappear by the middle of the fourth month and no medical treatment is necessary beyond the following simple procedures:

1. The use of fruits (dried or fresh) and laxatives to keep the bowels open.
2. Giving the patient some tea or coffee and hard toast one hour before rising.
3. Counter-irritant over the stomach.

When, however, the vomiting persists throughout the entire day and into the night, so that the patient

cannot retain any nourishment whatever, but gradually loses flesh and strength, and suffers from loss of sleep, fever and rapid pulse, the condition becomes more serious and is known as hyperemesis gravidarum. The nursing care of such a case requires a great deal of tact and common sense. The room should be well ventilated and kept spotlessly clean and darkened; the food served in small helpings and arranged attractively on the tray. Some of the foods advised are:

> Cold custard, milk, rice and milk, white meat of chicken, milk toast, dry toast, ice-cream, ices and cream soups with wafers.

In some cases liquid diet has to be resorted to. This consists of milk and seltzer, lime water or vichy, beef, mutton and chicken broth, beef juice, albumin water. In severe cases all feeding by mouth is usually stopped and rectal medication and feeding is resorted to.

Varicose veins may occur in the lower extremities and at times extend up as high as the external genitals. They are caused by pressure in the pelvis from the enlarged uterus, which presses on the large abdominal veins and interferes with the return of the blood from the lower limbs.

The treatment of this condition consists:

1. In dressing in such a manner that there is no constriction on any part of the body.

2. The patient should be kept off her feet as much as possible.

3. Use of a flannel bandage, applying it before getting out of bed in the morning and bandaging from the toes to hip.

4. Adhesive strips are cut one inch wide and seven inches long, and placed in a spiral direction, partly around the leg below and over the varicosities.

Hemorrhage during pregnancy. In the early months of pregnancy hemorrhage may be due to a beginning abortion, or less commonly to ectopic pregnancy. In the latter months the bleeding may indicate placenta previa, or be due to the separation of a normally situated placenta from the uterine wall.

As far as the nurse is concerned, the general treatment of hemorrhage occurring during pregnancy is the same in every case. Send for the physician, put the patient in bed and make her lie still on her back, reassure her in every possible way and avoid all noises and suspicion of excitement.

Albuminuria may be one of several types and may occur as early as the third month, although it usually makes its first appearance at about the sixth month. The diagnostic and only positive sign is the presence of albumin in the urine, hence it is of the utmost importance to have the urine examined at regular intervals. In neglected cases, the patient becomes anemic, suffers from headache, which is chiefly frontal, and develops edema, first of the ankles and legs and later of the face and upper extremities.

Dizziness, cloudiness of mind and vision occur as the toxemia becomes more marked. The urine becomes high colored and scant, and there is constipation and vomiting. In this disturbed state of the digestive system a slight attack

of acute indigestion is enough to bring on an eclamptic seizure. The physician treats these cases by administer ing saline cathartics and warm baths. The patient is restricted to a milk diet and gradually as improvement appears, cereals are given, later returning to the regular diet. In severe cases the hot pack is used.

Eclampsia is a disease of pregnancy characterized by the occurrence of convulsions usually late in pregnancy or just at the onset of labor. The exact cause of eclampsia is not definitely understood, but it is safe to say that it is largely dependent upon deficient elimination of waste products. Its threatened onset is indicated by the presence of albumin in the urine and by insufficient excretion of urea. The premonitary symptoms are those which have just been described as characteristic of albuminuria.

The treatment of eclampsia begins primarily with those preventive measures which every pregnant woman should practice, such as a nourishing diet with the reduction of red meat to once daily, the careful regulation of the bowels, the practice of daily bathing to keep the skin in good working order, regular out-of-door exercise and drinking at least two quarts of water daily. When these measures are carefully followed and urine is examined at stated intervals, it should always be possible to avert a threatened eclamptic attack.

If, however, the convulsions have set in, the nurse may proceed as follows: Send for the nearest physician.

Let the patient lie where she is, only moving her enough to place her in a comfortable position, insist upon absolute quiet in the room and the avoidance of all excitement. Care must be taken that the patient does not bite her tongue. The best method to avoid this is by means of a wooden clothes pin covered with gauze, which is placed between the teeth during an attack.

Sometimes a hot pack is ordered to promote free elimination of toxins by the skin. Recovery from eclampsia takes place slowly, the coma often continuing from one to four days.

FIGURE 41.
Obstetrical bed and table with supplies and solution.

FIGURE 42.
Obstetrical bed with the "temporary bed" turned back showing rubber sheet and draw sheet constituting the same.

FIGURE 43.
Showing elevation of foot of bed for patient with hemorrhage.

FIGURE 44.
Improvised Breast Tray.

FIGURE 45.
Improvised method of administering rectal infusion of salt solution.

LESSON 27.

NURSING CARE DURING CONFINEMENT.

Preparation for Labor.

Beginning at an early date in pregnancy, the prospective mother should prepare and make ready the articles which will be required at the time of her confinement. This outfit may be divided into two parts, one consisting of the articles needed for the mother's use, the second, supplies which will be required for the infant.

Articles required for the mother:

- 4 Abdominal binders, 1 3/4 yards long by 3/4 wide, made of unbleached muslin, torn the proper length and then washed and ironed to make them soft and comfortable.
- 6 maternity pads for the bed, each 24" square, made of cheesecloth stuffed with cotton batting, until it is 2 or 3 inches thick. They should be tacked to keep the cotton from slipping and are used under the patient's buttocks during the labor. When practical, it is well to have them sterilized before use.
- 30 Vulvar pads. These are made of absorbent cotton and gauze 10x3 inches and 2 inches thick. They are done up in packages of 6, each package wrapped separately in a clean cloth and sterilized.
- 12 towels (sterilized).
- 6 sheets (sterilized).
- 3 breast binders.
- 2 pairs maternity leggings.
- 3 sizes of safety pins.
- 1/2 lb. absorbent cotton.
- 5 yards sterile gauze.
- 1 tube of vaseline.

2 pieces of rubber sheeting, or white table oil cloth 1 1/2 yards square (each).

8 ounces tincture of green soap.

8 ounces of alcohol 95 per cent.

6 ounces lysol.

2 mason jars and 4 jelly glasses with covers.

Applicators (Cotton wound on tooth picks).

Nail brush.

Slop jar, or pail.

3 basins and 2 pitchers.

Perfection bedpan.

Fountain syringe.

Hot water bag.

Medicine dropper and medicine glass.

Bundle of newspapers.

Each article that requires sterilization should be covered neatly with a clean piece of cotton and plainly labeled, so that confusion may be avoided at the time of labor.

These supplies must all be sterilized by the nurse. This is done by filling a wash boiler one-fourth full of water and bringing it to a boil. Across the top of the boiler is suspended a hammock made of muslin and fastened to the handles of the boiler. In this hammock are put all dressings, etc., placed in muslin bags. Then the boiler is covered and the water kept boiling for an hour. At the end of this time the dressings are removed and dried in the sun or in the oven.

Articles required for the baby:

6 ounces olive oil.

3 dozen safety pins, (3 sizes).

2 pinning blankets.

3 flannel skirts.

6 flannel binders 6" wide and 18" long, edges not hemmed, used for the first two months.

4 dozen diapers, made twice as long as they are broad and these should be of two sizes, medium 20x40"; large 26x52".

3 knit bands with shoulder straps of silk and wool, or wool for the winter baby; of cotton for the summer baby.

3 pairs white woolen stockings.

10 slips, the more simply made the better.

3 knit shirts, silk and wool, or cotton.

Boric solution.

Castile soap.

Bath thermometer.

4 nightgowns.

1 Receiving blanket, one yard square, in which to wrap the infant immediately after birth.

2 or more blankets one yard wide, 1 3/4 yards long for wrapping about the baby, made of flannel, silk, or knit of wool.

A supply of pieces of old linen or cotton is always useful.

Selection, furnishing and preparation of the lying-in room. Two things are essential in the selection and preparation of the lying-in room. First, it must be scrupulously clean and secondly, it must be bright, properly lighted, well heated and thoroughly ventilated. All useless draperies and articles that can collect dust and all unnecessary furniture are removed. The room must be as clean and free

from dust-collecting and germ-breeding articles as it is possible to make it and the nurse, who has been thoroughly drilled in aseptic and antiseptic methods, will understand what is required.

The furniture of the lying-in room should consist of a bed for the mother, a cot for the nurse, unless the latter occupies a separate room, a bed, or bassinette for the infant, a bureau, table, washstand and two or three chairs.

Preparation of the bed. The bed must be so arranged that after labor it can be rearranged quickly and put in a clean and comfortable condition, without disturbing the patient to any great extent. This is accomplished by preparing the bed as it is to be during the puerperium and then add the necessary preparation for the labor.

The mattress is to be supported from below by means of boards slipped in between it and the springs, so that it will be perfectly firm and level during the labor. The boards are placed crosswise of the bed at a point directly under the patient's buttocks and should be removed at the conclusion of the labor, unless the springs have a tendency to sag in the middle. Their use makes easy all the work about the patient and by keeping the mattress perfectly flat prevent blood and other discharges from collecting in a pool under the patient's back.

The mattress is covered with a piece of rubber sheeting, or table oil cloth, pinned securely at the sides and corners, so that it will not slip. Over this is placed a cotton sheet tucked in six or eight inches at the top,

squared at the corners and pinned in the same way, and over this is placed a draw sheet, also carefully pinned. This is the correct arrangement of the sheets for the puerperium and is called the permanent bed.

The bed thus prepared must be protected during the labor by covering the sheets with another rubber sheet, or table oil cloth, and a second draw sheet, both of which are to be pinned securely all around. This is known as the temporary bed and is removed when the labor is completed.

Preparation of the patient for labor. The preparation of the patient includes a cleansing bath, an enema to flush the lower bowels, a thorough washing of the vulva and the clipping or shaving of the hair, followed by a cleansing with antiseptic solution. Following this a sterile vulvar pad is applied to protect the parts and absorb any discharge that may escape from the vagina. The patient's hair is braided in two braids and she is dressed in a clean nightgown, slippers and bath-robe.

The nurse must remember that from the beginning of labor, until ten days after delivery there are possibilities of infection for the patient; therefore, every maternity case should be treated as a surgical case. This is because during parturition small tears, or fissures, may occur in the birth canal. There also results a large raw surface inside the uterus, from which the placenta has been severed. Infection may take place from the patient's clothing, or bed, hands of the physician, nurse, or patient, from the

vulvar pads, solution or any of the appliances used during the delivery and puerperium.

Normal Labor.

Normal labor has been defined as one in which the head presents and descends regularly into the pelvis, in which the labor is concluded within 24 hours with safety to the mother and child and in which the placenta is expelled by natural means.

Labor does not come on without warning. There are three premonitary symptoms, namely, lightening, false pains and the show.

Lightening occurs during the last two weeks of pregnancy and is manifested by the child's head descending into the pelvis. This relieves the pressure on the organs above and makes breathing easier and walking more difficult.

False pains frequently occur in the last weeks of pregnancy. They occur at irregular intervals and are confined chiefly to the lower part of the front and sides of the abdomen and groin, never extending around to the back, and are short and ineffective.

The show occurs from a few hours to 24 hours before labor begins and consists of a discharge of thick mucus stained with blood. This is the plug of mucus that has filled the cervical canal during pregnancy, which is expelled when the true pains, or uterine contraction begin.

Labor. The beginning of labor is characterized by the beginning of the true pains. These occur with regularity, beginning in the back and extending around to the front.

The sensation of pain in the front of the abdomen remains after that in the back has ceased. In the beginning the pains are far apart, but as labor progresses, the intervals decrease gradually, being one hour, one-half hour, fifteen, ten and five minutes apart, until toward the end they follow immeditely one after the other.

Labor is divided into three stages as follows:

First stage: This extends from the time of the beginning of the labor pains to the complete dilatation of the os, or mouth of the womb. At the close of the first stage the membranes usually rupture and the water comes away. This serves to lubricate the birth canal and when, as sometimes occurs, the membranes rupture early in the first stage, we have what is known as a "dry labor", which is undesirable because it is slow and tedious. Furthermore, when the membranes rupture early in the first stage of labor the bag of waters, which is the natural means of dilating the mouth of the uterus, is absent, and, as a result, the labor is more prolonged and difficult.

Second stage: Comprises the period from the complete dilatation of the os to the end of the expulsion of the child.

Third stage: Extends from the time of expulsion of the child until the placenta is delivered and the uterus has contracted down on itself.

During the first stage of labor the patient is to be encouraged to keep on her feet the greater part of the time to favor the descent of the head into the pelvis and

the nurse should endeavor to make the ordeal as light as possible by cheering words and a hopeful manner. As soon as the membranes rupture the patient's clothing is removed and she is put to bed. The nightgown is pinned up around the abdomen and the maternity leggings put on.

The hand solution basins and all sterile supplies should be placed where the doctor can conveniently reach them and all possible aseptic and antiseptic precautions should be observed. The vulva should be frequently cleansed with sterile cotton sponges and some antiseptic solution applied, especially before the physician makes an examination. In cleansing the vulva, care should be taken to wipe the vulva downward ,never in the opposite direction, because this might carry infection into the birth canal.

As the head emerges gentle support of the perineum is given. When the head is born it is customary to feel for the cord and if it is around the neck, it should be slipped over the head. The head is supported and as the shoulder emerges, it is directed upward to avoid strain on the perineum.

The baby's eyes are cleansed with a boric acid solution and with a finger protected by a bit of gauze, the mouth is quickly wiped out. The hips and feet soon follow. There is usually a final rush of amniotic fluid with more or less blood. Compression is made above the uterus through the abdominal wall to stimulate contraction and to prevent hemorrhage.

As soon as the baby is born the physician or midwife in

attendance will put a few drops of silver nitrate solution or argyrol in its eyes. Silver nitrate solution comes put up in small bottles that are furnished free by the Health Department. This treatment of the eyes is necessary to prevent blindness in babies that have been exposed to gonorrhea and other infections during delivery but it is well to give this preventive treatment even when such infection of the mother is not suspected.

As soon as delivered the baby should be placed in such a position that there is no tension on the cord. The cord is tied in two places; the first ligature is placed one inch from the child's abdomen; the second one, one and one-half inches below it and it is cut between the ligatures.

The third stage lasts from 15 minutes to three-quarters of an hour. A basin should be in readiness to receive the placenta. The mother is then bathed, all the stains being removed from the buttocks and thighs and an abdominal binder and vulvar pad applied. The temporary bed should then be removed and the patient given a hot drink and left to rest.

The Puerperium.

The puerperium begins when the third state of labor is completed and continues until the genital organs have again returned to their normal condition. This requires about six weeks as a rule, but sometimes takes longer. Involution is the term applied to the return of the uterus to its normal size after childbirth. If abdominal conditions develop, the process of involution may be incomplete and the uterus remain permanently large. This condition is called sub-involution.

The lochia is the term given to the discharge from the

vagina during the puerperium. This discharge is at first red in color and has a bloody appearance. In a few days the bloody discharge gives place to one having a serous pinkish appearance. After eight or nine days the lochia becomes pale ,almost white. The lochia has a characteristic odor of its own, but the normal odor is never offensive.

The care of the patient during the puerperium. Order is heaven's first law and the successful nurse has a place for everything and everything in its place. She will keep the sick room clean and tidy, and observe the rules of surgical cleanliness in caring for her patient. During the puerperium surgical cleanliness should also be observed in the care of the breasts and genitals of the mother and the eyes, mouth and navel of the child.

After the mother has rested for six or eight hours following the labor, the nurse prepares the breasts by carefully washing them with soap and water and then with a little alcohol. Following this some albolene or cacao butter is applied. Before and after each nursing the nipples are washed with a saturated boric acid solution. The boric acid solution previously prepared, is kept in a bottle and enough poured into a glass for one cleansing only, using cotton pledgets (applicators) to wipe the nipple.

The baby is put to the breasts every four hours until the milk comes, then every three hours during the day and every four hours during the night.

Colostrum is the term applied to the milk secreted by the breasts during the first few days after labor. It

has a laxative effect on the baby and helps to bring on a movement of the baby's bowels.

Nursing of the baby promotes contraction of the uterus and stimulates the secretion of milk. On the third day when the milk "comes in", the breasts require the support of a binder. If they become greatly engorged ,the condition may be somewhat relieved by the administration of a saline cathartic. If this gives no relief the breast pump must be used.

Care of the genitals. Every four hours during the first few days the vulvar pads are changed and the patient is put on a douche or bedpan, the solution and articles required being arranged close at hand. The nurse scrubs her hands, remembering that the puerperal woman is a surgical case with wounds ready to receive infection. She then separates the labia and irrigates the parts with a one per cent. lysol solution, gently drying the vulva with sterile cotton pledgets, and then applies a fresh sterile vulvar pad. If there are stitches in the perineum they will require special attention, under the physician's directions.

The bladder. During labor there has been much bruising and stretching of the urethra (the canal by which the urine is conducted from the bladder and discharged) and the vulva also is swollen, thus making urination difficult. Unless the patient is suffering, ten or twelve hours may be allowed to pass before making efforts to empty the bladder.

There are several methods used to induce urina-

tion and all should be tried before resorting to catheterization. Some of these are:

1. Place the patient on a warm bedpan half full of warm water.

2. Irrigate the vulva with a warm antiseptic solution.

3. Hot fomentation over the bladder.

4. Sound of running water.

5. Raise the patient with pillows to a half sitting position.

The catheter should be used only when all other means fail, because of the danger of infection and then only when ordered by the doctor.

After pains are, as a rule, due to muscular contractions occurring as the uterus returns to its normal size, but may be caused by blood clots being retained.

Constipation is a common experience in such cases. The physician will usually order a medicine to be given. The practice at the Chicago Lying-In Hospital is as follows:

On the morning of the second day the patient receives one ounce of castor oil suspended in whiskey or sherry wine (orange juice will do as well) or given in a capsule. This is followed in six hours by a saline enema. Every day for the first week the patient receives a saline, or milk and molasses (of each six ounces) enema and if this does not produce a free daily evacuation, fluid extract of Cascara Sagrada, by mouth, in 15 drop doses is given twice daily. The medicine is put in empty capsules just before it

is administered. This method is better than giving a single large dose; although when administered in this manner the baby's bowels are made loose. When this happens, give a single dose of 30 drops after ten o'clock nursing and the effect on the child will be avoided. (De Lee.)

General care of the patient. The routine care of the patient consists of a cleansing bath daily, or an alcohol rub. The temperature, pulse and respiration should be taken at least three times a day. The room must be aired freely, in order to keep it fresh and sweet. In cold weather the patient is kept entirely covered with a sheet and blanket reaching well up to her head, while the windows are opened for ventilation. Under no circumstances should the nurse sleep with the patient. A cot should always be provided if there is not a separate room. Visitors should be excluded, with the exception of the immediate members of the family, for the first ten days; even these visits should be short.

The time of getting up is always a question that causes the patient great concern. De Lee's practice is to allow the patient to have a back-rest on the fifth day; to sit upright on the seventh; to get out into a rocker or Morris chair on the tenth; to stand on her feet on the eleventh; have freedom of the room on the twelfth and go downstairs on the fifteenth day.

The nurse's history sheet should be accurately kept from the beginning of the labor (if she is present at that time) until the case is discharged. On it should be

noted the pulse, temperature, respiration, condition of bowels, urine, lochia, breasts, milk, time of nursing, after pains and the diet.

The diet of the nursing mother need not be different from that to which she is accustomed. She should be warned against overwork, worry or nervous excitement, since these things affect the digestion of the nursing baby. The flow of milk should be considered in modifying the diet. If the flow is great and the breasts engorged, fluid should be restricted and if the milk secretion is deficient, fluid should be increased.

The routine diet list for a patient after confinement is approximately as follows:

The first 48 hours, milk, gruel, soup, tea, toast and butter.

Second 48 hours, milk toast, poached egg, cereals, soup, cornstarch, tapioca, wine jelly, tea and coffee, one cup a day.

Third 48 hours, soup, white meat of fowl, baked or mashed potato, in addition to the above.

After the sixth day return to ordinary diet,—three meals a day, a glass of milk, cocoa, or gruel between meals and before going to sleep at night.

Complications of the puerperium. The puerperium begins when labor is completed. Failure of the uterus to contract after delivery is sometimes a complication and the chief cause of postpartum hemorrhage, or hemorrhage after child-birth. It occurs from failure of the uterus to contract, from retention of parts of the placenta or laceration of some part of the genital tract.

Symptoms of postpartum hemorrhage are those of external bleeding, namely, pale face and lips, rapid pulse, cold sweat on the forehead, yawning, air hunger and dizziness. In most cases when hemorrhage occurs it follows the birth of the child, before the placenta is expelled, or comes on immediately after the birth of the placenta.

Secondary hemorrhage after childbirth is rare, but the general measures for dealing with it are the same. In such a case the nurse must retain her presence of mind, as quick action is necessary. The physician should be called at once. In the meantime efforts should be made to stop the hemorrhage, such as massage of the uterus through the abdomen, hot vaginal douche, (temperature 120 degrees Fahrenheit), and elevation of the foot of the bed. Careful nursing is required for some time following a hemorrhage. The diet should be fluid in order to increase the fluids in the system and of a nutritious character.

Puerperal infection. This is a complication always to be feared. It is usually due to an infection from without, either at the time of labor, or during the puerperium and is caused by surgical uncleanliness.

Puerperal fever usually develops about the third or fourth day after delivery, but its onset may be postponed until the eighth or ninth day. As a rule, however, if there are no symptoms by the end of the first week none will appear. There are several varieties of puerperal fever, each presenting a characteristic set of symptoms, except when the infection is severe. Every puerperal woman who has a fever is not

necessarily septic, as the temperature may rise from some other cause, but the nurse must never leave herself open to the charge of having neglected to report to the physician symptoms, which might be indicative of danger.

The symptoms of puerperal infection are a chill, a rise in temperature, rapid pulse, pain around the uterus, and cessation of change in the character of the lochia.

<u>In the care of a patient with puerperal infection</u> it is necessary to husband the patient's strength and increase her resisting powers so that she may throw off the toxins. The sick room should be well ventilated and the patient should have a bath every day, in order to promote elimination of the poisons through the skin.

The diet should be liquid, of nourishing quality, easily digested and daintily served. The following articles of diet may be given

> Milk, diluted or peptonized, buttermilk, junket, custards, beef juice, albumin water, etc.

The vulvar pad should be changed frequently since the discharges are irritating. The used pads should be wrapped in paper and burned as soon as possible. The bed and body linen should be removed and disinfected whenever soiled by discharges from the patient.

The rectal infusion of saline solution by the drop method is often ordered by the physician for the treatment of puerperal infection. Two teaspoonfuls of common salt in a quart of water gives about the right proportion. The douche bag is hung on the bed-post with a hot water bag

alongside, both wrapped in a towel; the tube of the enema or douche bag, is connected by a glass connecting tube, with a small rubber catheter. The catheter is inserted in the rectum and the tube is clamped, so as to allow the solution to drip slowly from the catheter drop by drop. The saline infusion helps to dilute and wash the poison out of the system.

Engorgement of the breasts occurs on the second, third and fourth day when the milk "arrives". The breasts are enlarged, heavy, hot and painful. Usually the engorgement will subside gradually. The symptoms may be relieved by applying a snug breast binder, restricting liquids, and giving a saline cathartic. Massage and the breast pump are not recommended as routine measures and should be resorted to only if ordered by the physician in charge.

Cracked or fissured nipples. If the proper precautions are taken previous to childbirth, this condition should not exist. It is well, however, to inspect the nipples every day to see that blisters or cracks are not developing. This is necessary even if the patient does not complain of the nipples being sensitive. If anything is noticed or pain is complained of, it should be reported to the physician at once.

Mastitis, or inflammation of the breasts, is caused by infection. Conditions which predispose to mastitis are fissures of the nipples, or injury to the gland by too vigorous manipulation. The symptoms are pain in one part of the breast ,redness, swelling, rise of temperature

and other febrile symptoms. If the temperature drops in a day or two the formation of pus is unlikely.

The usual treatment consists in application of ice bags to the breasts, continued until the temperature is normal. A binder is applied and saline cathartics given. In the meantime the baby is withheld from the breast.

Phlegmasia alba dolens, or milk leg, is a disease characterized by pain and swelling in the affected limb, due to the formation of a blood clot in the veins of the leg, or in those of the pelvis. Such clots interfere with the return circulation of blood. The condition is due to septic infection, extending from the uterus to the veins of the pelvis, and appears about two weeks after labor. As a result of the obstruction of the circulation the limb becomes swollen, tense and very painful. The treatment should be carried out under a physician's directions. Elevation of the leg and wrapping it in cotton to relieve the pain are the measures most commonly resorted to. Rubbing and massage may do great harm and therefore, should never be employed by the nurse unless ordered.

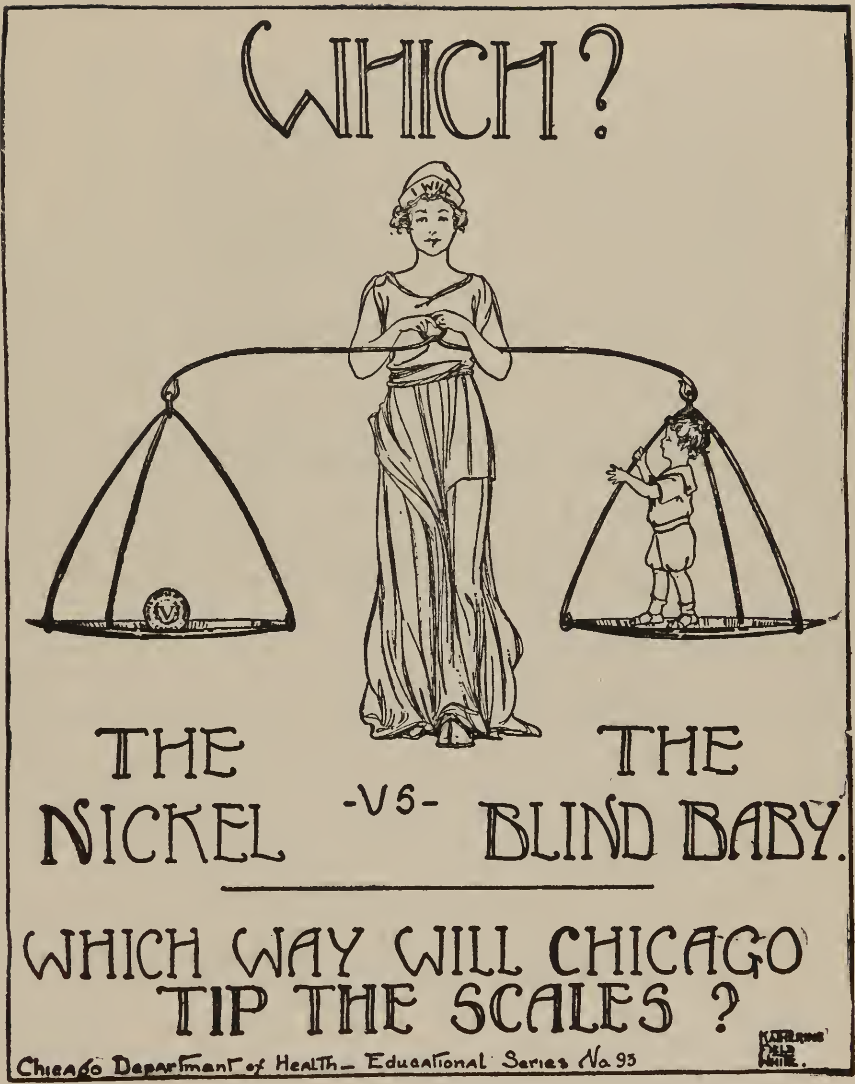

WHICH?
THE NICKEL
-VS-
THE BLIND BABY.
WHICH WAY WILL CHICAGO TIP THE SCALES ?
Chicago Department of Health – Educational Series No 93

FIGURE 46.

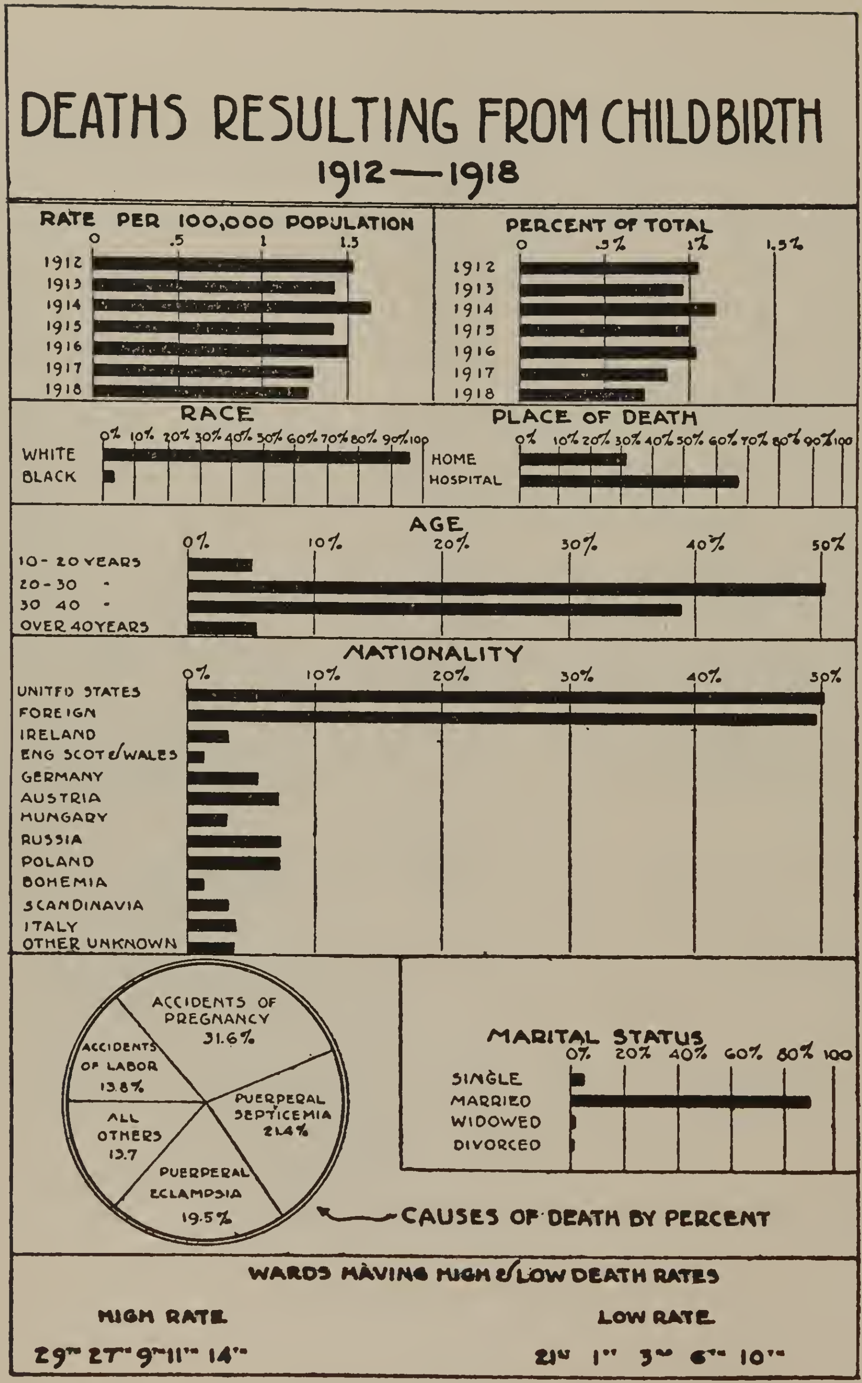
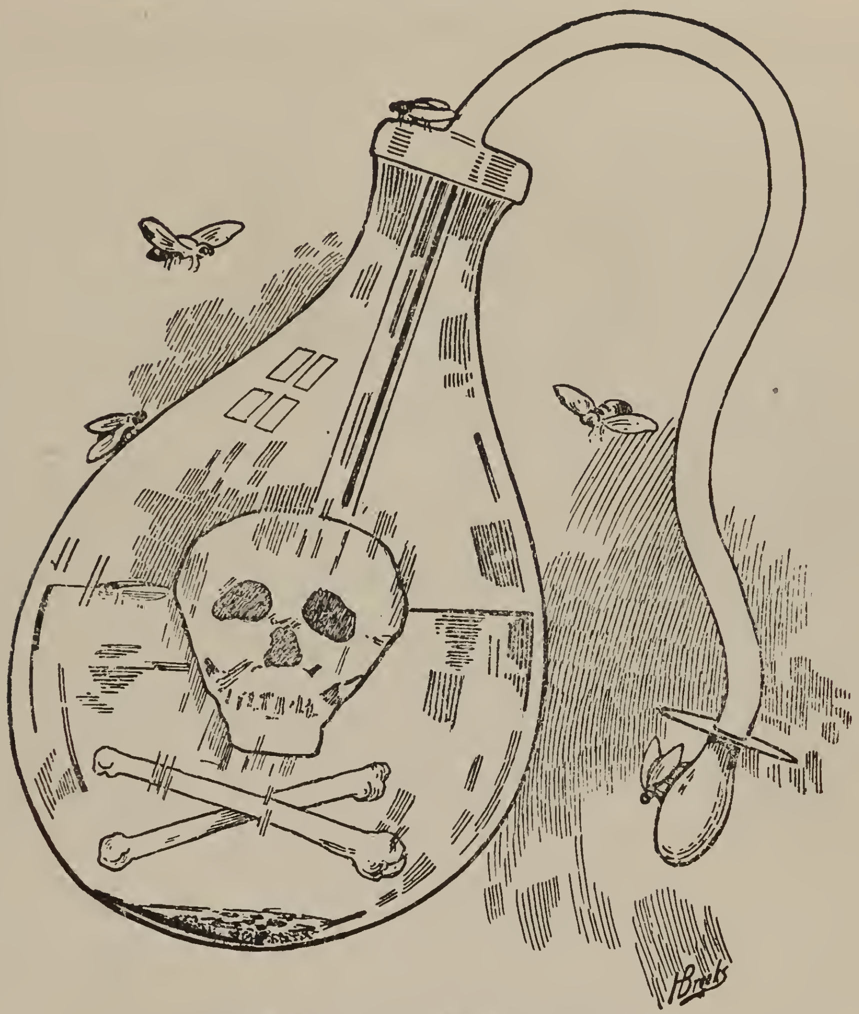

DEATHS RESULTING FROM CHILDBIRTH
1912—1918
RATE PER 100,000 POPULATION
0 .5 1 1.5
1912
1913
1914
1915
1916
1917
1918
PERCENT OF TOTAL
0 .5% 1% 1.5%
RACE
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100
WHITE
BLACK
PLACE OF DEATH
HOME
HOSPITAL
AGE
0% 10% 20% 30% 40% 50%
10 - 20 YEARS
20 - 30 -
30 40 -
OVER 40 YEARS
NATIONALITY
UNITED STATES
FOREIGN
IRELAND
ENG SCOT & WALES
GERMANY
AUSTRIA
HUNGARY
RUSSIA
POLAND
BOHEMIA
SCANDINAVIA
ITALY
OTHER UNKNOWN
ACCIDENTS OF PREGNANCY 31.6%
ACCIDENTS OF LABOR 13.8%
PUERPERAL SEPTICEMIA 21.4%
ALL OTHERS 13.7
PUERPERAL ECLAMPSIA 19.5%
CAUSES OF DEATH BY PERCENT
MARITAL STATUS
0% 20% 40% 60% 80% 100
SINGLE
MARRIED
WIDOWED
DIVORCED
WARDS HAVING HIGH & LOW DEATH RATES
HIGH RATE
29th 27th 9th 11th 14th
LOW RATE
21st 1st 3rd 6th 10th

FIGURE 47.

There's Death in the Dirty Bottle

Thousands of babies have been killed through the use of dirty bottles



Pointers About The Baby's Bottle:

First: Get the right kind of a bottle—one without a tube, one easily washed. The best kind is one with large opening at top, the removable rubber cap and nipple forming the top of the bottle.

Second: Keep the bottle and nipple very clean. After each feeding remove the nipple and boil both bottle and nipple for ten minutes. Before using again rinse the bottle and nipple in boiled water—about a quart of water in which a teaspoonful of baking soda has been dissolved—or keep them in a pan of water containing a little soda when not in use.

FIGURE 48.


MOTHER'S MILK FOR MOTHER'S BABE
COW'S MILK FOR CALVES
(God's Plan)
The Long
vs-
The Short Haul
70 per cent. of city babies get their food through a tube 60 miles long.
It takes about 36 hours—often 42 hours—for the milk to run from the cow end of the tube to the baby end of the tube.
This tube is open in many places and baby's food is frequently polluted. It is often wrongly kept in overheated places.
Then there may be a diseased cow at the country end of the tube.
And Yet Some People Wonder Why So Many Babies Die!
On the other hand the mother-fed baby gets its milk fresh, pure and healthful---no germs can get into it.
To Lessen Baby Deaths Let Us Have More Mother-Fed Babies.
You can't improve on God's plan.
For Your Baby's Sake---Nurse It!
MILKTOWN
FRESH
MILK
FRESH MILK CO.
DEPOT
MILK SPECIAL

FIGURE 49.

LESSON 28.

CARE OF THE BABY.

All babies should be fed with mother's milk, if possible. It is the only perfect food for babies. It is always fresh; it is clean; it has the right body-building material in it and it changes to suit the growing baby.

There are, however, conditions and diseases affecting the mother which make it necessary that she should not nurse her baby. A mother suffering from tuberculosis, epilepsy, insanity and chronic nervous diseases, or who is in poor health from Bright's disease, heart disease, diabetes or anemia should not nurse her baby. Diseases of the breasts and nipples may be cause for temporarily withholding the child from the breast, and deformities of the nipple sometimes make nursing impossible. In case the baby must be fed from the bottle a private doctor, or an Infant Welfare Station doctor, should decide the formula for the baby's food. Usually modified cow's milk is the best food for the baby that cannot have mother's milk.

Nursing the Baby.

The nursing mother should watch her own food carefully, as mistakes in her diet may result in the baby having constipation, diarrhea, cramps, or colic. Some doctors advise against eating cabbage, tomatoes, cucumbers and onions. If, however, the mother eats these and the baby suffers no ill effects during the next twenty-four hours, there is no reason why the mother should not continue to eat them. The nursing mother must never allow herself to become constipated

and she should include in her diet as large a quantity of milk, cocoa, etc., as she can take with ease.

In the past doctors have recommended that the baby should be fed every three or four hours. It has been found, however, that there is a great deal of difference in the time that it takes to empty the stomach of different babies, and it is now known that the interval between feedings should vary to suit the needs of the individual baby. There should, however, be a definite interval between feedings, and the baby should never be fed except at the regular feeding time.

Regime of Breast Feeding.

As soon as the mother has had enough rest after confinement, allow the baby to nurse as this aids in involution of the uterus. Nothing but clear, boiled water, warmed to the proper temperature, should be given to the baby until the milk comes in. Have regular hours for feeding, four-hour intervals being the best; three-hour intervals, with one at night, are allowable if the amount of milk is small. The breast produces according to the demand, i. e., a large amount of milk at the end of longer nursing intervals, and by stimulation of a vigorously nursing baby. The period of nursing should never exceed twenty-five minutes, as the baby gets the bulk of the milk in the first three to five minutes and later a higher percentage of fat.

Feed once at night the first week, but at the end of the first week discontinue the night feeding and feed five times at four-hour intervals in the day-time. From six months on a starchy feeding can replace one breast feeding;

at eight months two feedings, and at eleven months three feedings, two being farinaceous and one of vegetables.

FEEDING TABLE, FIRST YEAR, FOR NORMAL BABIES.

Age	6 A.M.	10 A.M.	2 P.M.	6 P.M.	Night Feed, 10 P.M.
1 to 6 mos.	B	B	B	B	B
7 " 8 "	B	B	C	B	W or B
8 " 10* "	B	C	V	B	W or B
10 " 12 "	B	C	V	C	B

B—Breast; C—Cereal; V—Vegetable; W—Water.

*Wean at nine or ten months unless the weather is very hot.

A cereal for the baby may be prepared by cooking one tablespoonful of farina in one cupful of water in a double boiler for thirty minutes. Serve it with two ounces of milk, and feed it with a spoon.

Most babies are weaned when about ten months old. It is not well, however, to wean a baby during the months of July and August, because this makes it necessary for the baby to adjust itself not only to the hot weather, but also to a new diet. Weaning should be done gradually, so that the baby becomes used to solid food before it is entirely removed from the mother's breasts. This is best accomplished by resorting to "mixed feeding" at about the ninth month, and gradually diminishing the breast feedings.

Mixed Feeding of Older Babies.

At the age of six and one-half months, two graham crackers a day and a little zwieback may be added to the diet. At seven months the baby may be fed a little beef broth, and a bit of cooked apple, in addition to the cereal, graham crackers and zwieback.

At eight months the baby may be given mashed carrots, and clear soups made of beef, chicken, or vegetables. The vegetable soup is made by cooking one potato, one stalk of celery, one carrot ,one white turnip and one tablespoonful of green peas in one quart of water. This should cook until it makes one pint of soup. Run it though a strainer; but do not mash the vegetables.

At ten months the baby may be allowed mashed potatoes, or baked potatoes and one or more bottles of milk. Mothers feeding the baby potatoes must watch carefully the baby's bowels. If there is a tendency to diarrhea, potatoes should not be included in the diet until the baby is older.

Artificial Feeding.

When artificial feeding has to be resorted to it must be carried out under a physician's directions. The greatest difficulty in properly modifying the artificial diet is experienced in the feeding of weak and undernourished children. Here the formula must be most carefully adapted to the digestive capacity of the child.

Although cow's milk is the best substitute for mother's milk it is necessary to modify it so as to make it resemble human milk as closely as possible. The essential differences between cow's milk and mother's milk, are shown in the following table:

MOTHER'S MILK VS. COW'S MILK.

Average contents of milk—

	Mother's	Cow's
Protein	1.5	4.0
Fat	4.0	4.0
Sugar	7.0	4.0
Salts	.2	.75
Water	87.3	87.25

Mother's Milk	Cow's Milk
Protein (Casein) forms small flocculent curds.	Curds formed are large and more solid.
Small per cent. of salts.	Larger per cent. of salts.
Reaction—Neutral or Alkaline.	Acid in reaction.
Antibodies to human diseases.	Antibodies to cow's diseases.
Tolerance perfect on part of the infant.	Tolerance limited on the part of the infant.

Cow's milk contains more proteid (curd) and less carbohydrate (sugar) than mother's milk. Furthermore, the proteid of cow's milk forms a denser curd, which is less readily digested than the finer curd formed from mother's milk.

The method usually employed in modifying cow's milk so as to make it more nearly resemble mother's milk, is to reduce the per cent. of proteid by adding water and then bringing up the per cent. of sugar by adding milk sugar. The fat content of the diluted milk is increased by adding cream.

The younger the baby the greater the dilution at which cow's milk is fed; the older the baby the less the milk is diluted. Up until three months ,only water is used as diluent. After five months the diluent is farinaceous water.

The average normal baby needs 1 1/2 ounces of standardized milk per pound of body weight in 24 hours, the milk being of standard quality. This means that the cow's milk will be short of carbohydrates as compared with mother's milk and hence sugar must be added to bring it up to a carbohydrate content of seven per cent. or slightly more. This means adding from a half to one teaspoonful of sugar to the content of each nursing.

If it is necessary for the mother to feed the baby from bottles, she should prepare at one time enough bottles to last for twenty-four hours.

To prepare the bottles she must have: One bottle brush, six bottles, six nipples, six corks, one measuring glass, one saucer, one teaspoon, one knife, a two-quart pitcher, and a large kettle, in which to boil the bottles.

Before preparing the milk the mother should wash her hands and also all the utensils to be used. She should boil the bottles, nipples, corks, etc., for five minutes. Scald the milk, measure out the necessary amount of boiled water, measure the sugar and add it to the water; measure the milk, and add the sugar and water to it. Then fill the nursing bottles, cork them, set them aside to cool, and place them in the ice box until they are needed.

Before feeding, the milk should be heated to blood heat by putting the bottle in a vessel of warm water. Test the temperature of the milk by sprinkling a few drops on the back of the hand.

The mother should always hold the baby while it is taking its bottle; never give a bottle to a baby that is lying down in its crib or basket. The feeding should take about twenty minutes. If the baby drinks too rapidly, or if it takes air in with the milk, it may get colic.

Bathing.

The baby must have a bath daily. The water for the bath should be about body temperature. If you do not have a thermometer, test the water by placing your elbow

in it. Don't depend on the hand to determine the temperature; On very warm days a baby should be sponged two or three time swith lukewarm water and any reddened or inflamed parts dusted with talcum powder. Always give a bath just before feeding time.

Before beginning the baby's bath have everything ready. You will need a bathtub,—the regular footbath is about the right size for the baby's tub—soap, towel, washcloth, pitcher of hot water, the baby's clothing, a glass of boric acid solution and absorbent cotton. The boric acid solution is for washing the baby's eyes, ears and nostrils. It should be applied on little bits of absorbent cotton, and the same bit of cotton should never be used for washing more than one eye or ear or nostril in order to avoid the possibility of carrying infection.

Wash the baby's face and head before putting it into the tub. Then lower him into the water meanwhile supporting the head and shoulders with the hand. Bathe him well and dry him thoroughly being careful that the groin and the armpits are well dried. Do not let him get chilled while dressing him. Be careful to use a very soft towel and a very soft washcloth,—as a matter of fact, the more nearly worn out they are, the more nearly they are likely to be soft enough not to injure the baby's skin.

Clothing.

The clothing should be soft, light, warm and plain and the weight of it should vary with the weather. On very hot days the baby should be dressed in little or nothing,

except its band and diaper. In cold weather it should be dressed warmly enough so that its hands and feet will feel warm. A baby that perspires is too warmly dressed. More babies have been killed or injured by being dressed too warmly than by being dressed too scantily.

The band, which is put on first in dressing the baby after his bath should be of soft flannel. After the band is in place put on the diaper and then the shirt, which should be part wool for the first year. The petticoat should be arranged inside the dress and both should be slipped on together over the feet. Turn the baby on his side in order to fasten his clothes. It should be necessary to turn him only once. Lastly, put on the stockings which ought to be wool or part wool.

The baby's clothing should be changed every day and all diapers must be washed and scalded after each using, unless the mother wants to run the risk of the baby's developing eczema. Even if they are only slightly wet they must be washed out and scalded.

Baby's Bed and Sleeping.

The best bed for the baby is a crib or a basket of sufficient size. A clothes-basket may be used to advantage for the first year for it can be easily moved from one part of the house to another. All bedding should be light in weight and it should be kept fresh and clean. Either no pillow at all should be used or a very small one. The mattress may be protected by rubber sheeting or oil cloth placed under the sheet. Between the baby and the sheet

there should be a pad made of absorbent cotton covered with cheesecloth and loosely knotted like a small comforter, or a pad made of several thicknesses of old sheets. These pads should be washed daily. The blankets used should be light enough so that they can be washed often. A netting screen may be used to keep flies and mosquitoes from the baby; but it should be watched to see that it does not drop into the baby's face.

The baby should sleep alone in a room where the air is fresh. It is well during the daytime to have the baby sleep out-of-doors most of the time. The baby should be put to bed at regular times and should be taken up at regular times. These times should not be determined by his crying, but should follow a fixed schedule. If a baby is not hungry, is not wet, is not uncomfortable in any way, crying will not hurt him. Every baby must cry a certain amount of the time in order to develop his lungs and to give his body necessary exercise. It is very easy to distinguish between the cry of pain, the cry of discomfort and just ordinary crying.

General Care.

If the baby gets colic give him warm water to drink and apply heat to his stomach. If he is properly fed and is not allowed to get chilled, he will not have colic.

During infancy many life habits are established. The baby should be trained to regular sleeping, regular eating, regular movements of the bowels and absolute obedience at all times.

The following are often given as the milestone of the baby's first two years:

One month; taste, sight and hearing developed.

Three months; plays with hands.

Four months; holds up head.

Six months; sits up easily, first tooth appears.

Eight months; creeps, laughs and sighs.

Nine months; tries to stand.

Ten months; attempts to walk.

Twelve months; begins to talk.

Fourteen months; walks readily and talks well.

Eighteen months; begins to run and tries to play ball.

It is recommended that everyone taking care of a baby write to the Children's Bureau, U. S. Department of Labor, Washington, D. C., for Bureau Publication No. 8, "Infant Care", by Mrs. Max West. It is sent free to anyone who asks for it, and is a thoroughly helpful book.

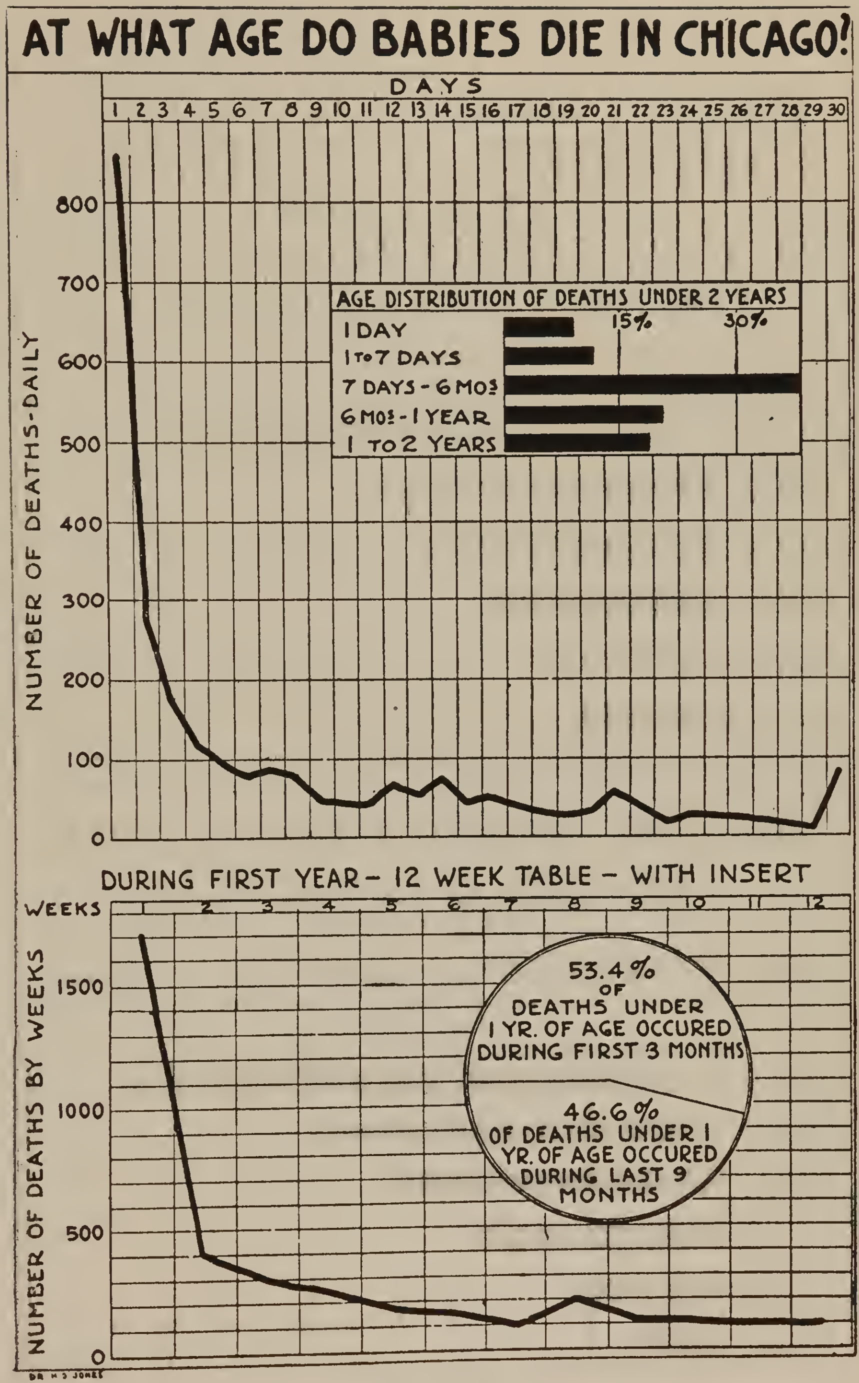

AT WHAT AGE DO BABIES DIE IN CHICAGO?
DAYS
NUMBER OF DEATHS-DAILY
AGE DISTRIBUTION OF DEATHS UNDER 2 YEARS
1 DAY
1 TO 7 DAYS
7 DAYS - 6 MOS.
6 MOS. - 1 YEAR
1 TO 2 YEARS
15%
30%
DURING FIRST YEAR - 12 WEEK TABLE - WITH INSERT
WEEKS
NUMBER OF DEATHS BY WEEKS
53.4 % OF DEATHS UNDER 1 YR. OF AGE OCCURED DURING FIRST 3 MONTHS
46.6 % OF DEATHS UNDER 1 YR. OF AGE OCCURED DURING LAST 9 MONTHS

FIGURE 50.

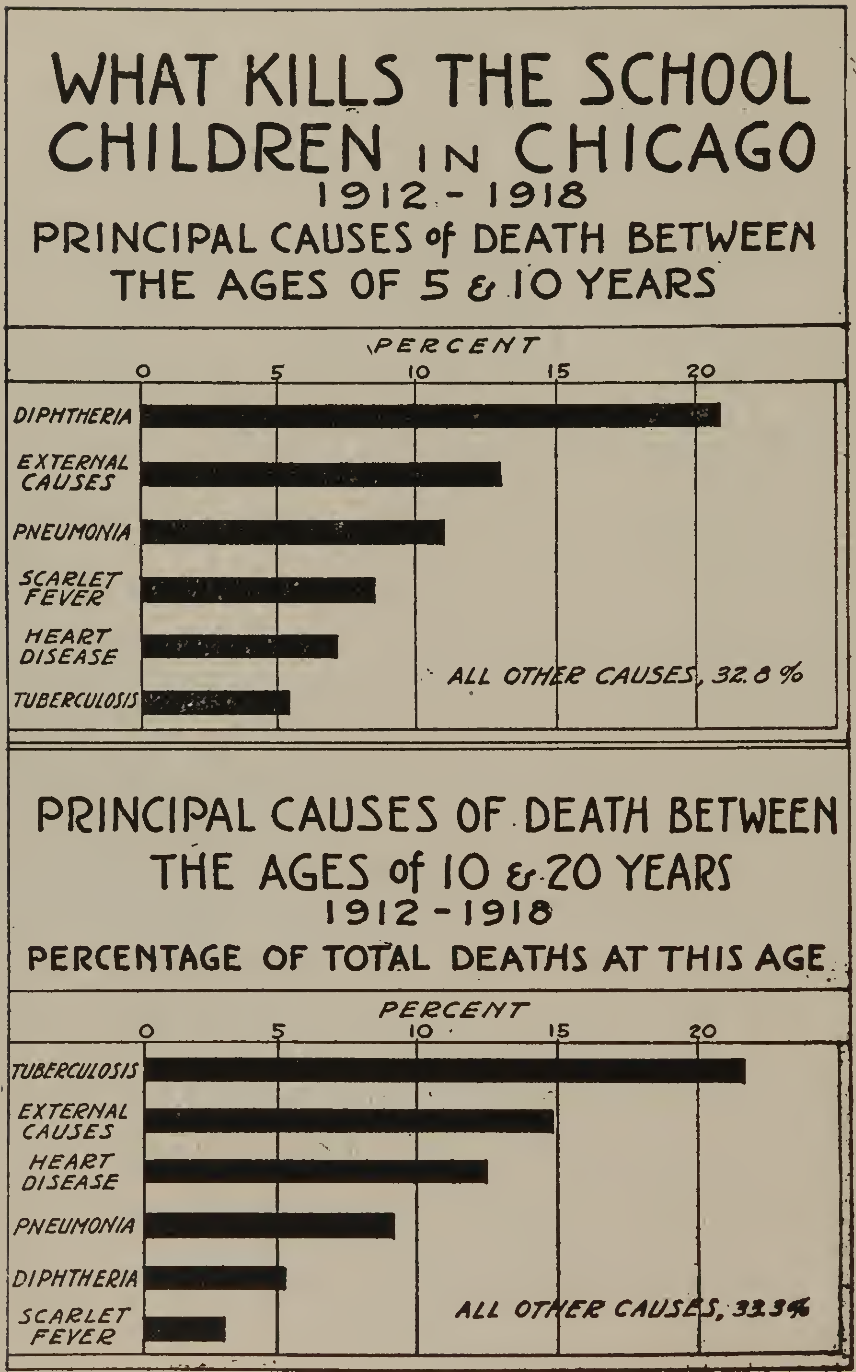

WHAT KILLS THE SCHOOL CHILDREN IN CHICAGO
1912 - 1918
PRINCIPAL CAUSES of DEATH BETWEEN THE AGES OF 5 & 10 YEARS
PERCENT
0
5
10
15
20
DIPHTHERIA
EXTERNAL CAUSES
PNEUMONIA
SCARLET FEVER
HEART DISEASE
TUBERCULOSIS
ALL OTHER CAUSES, 32.8 %
PRINCIPAL CAUSES OF DEATH BETWEEN THE AGES of 10 & 20 YEARS
1912 - 1918
PERCENTAGE OF TOTAL DEATHS AT THIS AGE
PERCENT
0
5
10
15
20
TUBERCULOSIS
EXTERNAL CAUSES
HEART DISEASE
PNEUMONIA
DIPHTHERIA
SCARLET FEVER
ALL OTHER CAUSES, 32.3%

FIGURE 51.

LESSON 29.

CARE OF THE OLDER CHILD

The proper development of the normal child depends almost entirely upon:

(a) Proper feeding.

(b) Proper surroundings.

(c) Proper environment.

Proper Feeding.

Proper feeding of a child includes not only the food given, but the manner in which it is given. The child should not be allowed to eat too fast. It is often difficult to prevent this if he has his mind set on getting back to play as quickly as possible. To prevent this it is well to make a rule that the child must stay at the table a certain time at each meal-time. If he knows that he must stay at the table whether he is eating or not, the temptation to hurry will be removed.

It is not well that one child should eat by himself. Children eat more when they are in the company of other children and it is more common to find children who do not eat enough than to find children who eat too much.

The growing child is particularly in need of foods that are rich in mineral salts. He does not need tea, coffee or alcohol. Candy, cake, pastry and the like should not be given to the child under six, and when given to older children should be allowed sparingly, for they have the effect of satisfying the appetite before the child has really

had enough to eat. When candy is given, it should be given immediately after a meal.

A good diet for a growing child should consist of plenty of milk, cereals, vegetables, fruit, meat, bread and butter.

Proper Surroundings.

Every child should live where he can get plenty of pure, fresh air, and where he has plenty of space in which to play. It is quite as bad to deprive a child of sufficient fresh air as it is to deprive him of sufficient food. Children that are kept indoors a great deal in hot, close or overheated rooms are usually dull, listless, pale and under-developed. The system of such a child is not resistant to disease.

Children naturally require a great deal of exercise to develop their growing bodies. This exercise they get by means of play. If they do not have a yard of their own to play in they should at least be near a public park, or a public playground.

Proper Environment.

The child's environment includes his surroundings and the people with whom he comes into contact. For many years there was much discussion among scientists as to whether heredity or environment had the greater influence in molding the life of a child. Nowadays it is pretty generally believed that many hereditary defects can be overcome by the child's environment and training.

At no other time in life is the environment so

important as during the first six years. The Jesuits were accustomed to say, "Give us a child during his first six years and we do not care who has charge of him after that". This was because they knew that the training of the first six years determines the sort of person the child will become.

The mother or nurse should watch the habits of the child during these early years, for upon the habits formed when he is young will depend in a large measure his health when he is grown. He should be trained to regularity of sleeping, eating, bathing, brushing his teeth, going to the toilet, washing his hands after going to the tolet, etc. There is no excuse for either constipation or diarrhea in a well, properly fed, properly trained child. From the time the baby is a few weeks old, he should be taken to the toilet at a regular time in order that his bowels may be trained to regularity, for regularity of movement is one of the surest preventives of constipation.

Every child under six years of age should sleep from eight to ten hours at night and should take a nap daily. If the child gets enough sleep and enough food, his weight should correspond to those of the following table, prepared by Dr. W. R. P. Emerson:

Height	Average Weight for Height	
	Boys	Girls
Inches	Pounds	Pounds
35	32.0	31.0
36	33.5	32.5
37	34.5	33.5
38	36.0	35.0

Height	Average Weight for Height	
	Boys	Girls
Inches	Pounds	Pounds
39	37.5	36.5
40	39.0	38.0
41	40.5	39.5
42	42.0	41.0
43	43.5	43.0
44	45.5	44.5
45	47.5	46.5
46	49.5	48.5
47	51.5	51.0
48	53.5	53.5
49	55.5	55.5
50	59.5	58.5
51	63.0	61.0
52	66.0	64.0
53	69.0	67.5
54	72.5	71.0
55	77.5	75.0
56	79.5	78.5
57	83.5	83.0
58	87.5	87.0
59	91.5	91.5
60	95.0	96.5
61	99.5	102.5
62	105.0	110.5
63	109.5	116.0
64	116.0	
65	119.5	
66	126.0	
67	134.0	
68	138.5	

Proper Nourishment.

If a child does not weigh as much as he should for his height, he is probably undernourished. This does not mean that he is not getting enough food, but that he is not getting enough of the right kind of food. Doctors claim that one-third of the children in the United States are undernourished. This condition is found just as frequently among children of the very rich as among children of the very poor, because the children of the very rich,

or of the well to do are likely to be allowed more freedom in selecting their foods than other children and are likely to select foods that are not particularly nourishing.

If a child is under weight and this condition is not due to enlarged tonsils, adenoids or some physical defect or disease, the mother may be sure that the child is not eating enough of the right sort of food. It must be remembered, however, that the child's height does not increase gradually, but by periods of sudden growth. The child may become several inches taller in a few weeks. During this period of sudden growth the weight does not conform to the above scale, and yet such a child may be well nourished. The mother, however, need not be alarmed by the child's being under weight,—at least not until he has had time to add weight in proportion to his new height.

If the mother is certain the child is getting the proper kind of food, then she will need turn her attention to getting him to eat more. The best means of accomplishing this is probably to give him a meal in the middle of the forenoon and another in the middle of the afternoon. Experiment has shown that a child derives more nourishment from five moderate meals a day than from three large ones.

Sometimes the child's appetite is poor because he has worms. The presence of worms in the intestines of the child sometimes causes a feeling of fulness and the child says he doesn't feel hungry. Two sorts of worms are commonly found in the intestines of children,—the tiny pinworm and a larger round worm. Their presence often causes

bed-wetting, fretfulness and irritability, as well as loss of appetite. They are introduced into the body by unclean hands, unclean food or drink.

Our grandmothers fed their children pumpkin seeds to keep them free from those parasites. The drug stores now carry a number of worm remedies. If a child has worms, however, or if the mother thinks he may have them, it is well to consult a physician because some worm medicines on the market are so strong as to be dangerous. Worms are very quickly disposed of by the proper treatment; too often, however, the mother treats the child for some other ailment instead of suspecting the real trouble.

These worms are not to be confused with the hookworm, which is rarely found in the North. The hookworm causes the hookworm disease, which results in a loss of energy. For many years it was supposed that the people afflicted with the disease were just naturally very lazy. Now that the cause of the disease is known, it can be easily cured.

General Physical Condition.

During the period of growth special attention should be given to the child's teeth and ears. He should be taken to the dentist twice a year to have his teeth looked over for possible cavities. Many mothers think it unnecessary to have a dentist attend to the first teeth because they last so short a time, but this is a mistaken notion. The condition of the second teeth depends largely upon the care of the first. The child should be taught to brush his teeth cor-

rectly, brushing them up and down instead of across. He should be taught to use dental floss for removing the tiny particles of food that accumulate between the teeth where the brush cannot get at them. He should also be taught to use a good mouth wash after every meal,—either a simple home-made mouth wash, such as salt water, or one prescribed by his own dentist.

The mother should see that the child's ears are kept clean. She must, however, be most gentle in washing them because they are extremely sensitive. The least possible soap should be used and the wax should never be removed with hairpins, nail sticks or the like.

Medical inspection is now maintained in the schools to detect defects of vision and hearing. If such defects are reported to the parents they should do all in their power to have the defects remedied.

If a child breathes through his mouth the mother may be quite certain that the regular air route through the nose is blocked up in some way. This may be due to enlarged tonsils or adenoids. The mother should take the child to a doctor if she suspects either, for the earlier such a condition is remedied the better it is for the child. Enlarged adenoids are responsible not only for mouth breathing, but also for frequent colds, deafness, deformity of the jaws, deformity of the chest, mental stupidity, and stunted growth.

The mother should do all that she can to guard the child against measles, chickenpox, whooping cough and the other so-called diseases of childhood. The old idea

that every child was bound to have those diseases sooner or later, and might as well get them and have it over with, is no longer believed true. We know now that children do not need to have these diseases any more than they need to have any other disease. We know also that an attack of measles or whooping cough greatly lowers the child's resistance to other diseases. These diseases are all very contagious in their early stages. They all resemble a cold in the early stage; consequently a child who has not had these diseases that seems to have a cold should be kept in a room by himself.

If a child weighs enough for his height, the mother may feel reasonably certain that his body is developing satisfactorily.

Mental development is measured by years, but the mental age is not based upon physical age. It often happens that a child six years old mentally may be ten years old physically. The scale most frequently used in determining mental age is the Binet Test.

LESSSON 30

REVIEW QUESTIONS ON GENERAL NURSING.

Lesson 1.

1. What are the necessary qualifications of a good nurse?

2. Why is it necessary that the nurse be able to improvise?

3. What are the nurse's duties to her patient?

4. Why should the nurse make written notes of the doctor's directions?

5. Should the nurse ever give the patient medicine without consulting the doctor? Give her own health?

6. How should the nurse maintainularly careful about

7. Why should the nurse be paticreasons for your answer. her shoes?

8. Discuss the proper sort of dress for a nurse.

Lesson 2.

9. Describe a model sick room.

10. What sort of room would you select for an elderly invalid?

11. What sort of room would you select for a patient with a contagious disease?

12. Why should the sick room be near the bath room?

13. What is dust composed of?

14. What are the essential furnishings of a sick room?

15. How would you raise a low bed to the proper height?

16. What is the best sort of bedding?

17. How would you protect the mattress if it needed protection?

18. Why do we need fresh air in the sick room?

19. How would you ventilate a room with only one window in it?

20. Name some methods of protecting the patient from draughts.

21. What is the proper temperature for a sick room?

22. Why should flies be kept out of the sick room?

23. How should the floors of a sick room be cleaned?

24. What disposal is made of the urine, feces and vomited matter in communicable diseases?

25. How is the soiled linen treated in cases of communicable diseases?

26. Why should not family worries be discussed in the presence of a patient?

Lesson 3.

27. Describe the making of a medical bed.

28. What difference is there between the making of a medical bed and a surgical bed?

29. What difference is there between the making of a medical bed and a maternity bed? A fracture bed?

30. Describe the method of making a bed with the patient in it without changing the sheets.

31. How would you change the lower sheets of a bed with the patient in the bed?

32. Tell how you would change the upper sheet with the patient in bed.

33. How would you turn the mattress with the patient in bed?

Lesson 4.

34. When should the patient be humored?

35. What care should the nurse take of the patient before she gives him his breakfast?

36. How would you prop a patient up in bed?

37. What would you do in treating a case of difficult breathing?

38. Name several methods of resting the patient who must lie in bed all of the time.

39. Name several uses for small pillows.

40. Discuss the method of getting a patient up in a chair.

41. How long should a patient sit up the first time?

42. Why should one not use forcible restraint for a delirious patient?

43. Discuss the proper method of giving a bedpan to a patient.

44. Why should the nurse be careful about the way she gives the bedpan?

45. What care should be taken of the pedpan in typhoid cases?

46. Name four common causes of bedsores.

47. Name four ways of preventing bedsores.

Lesson 5.

48. What are the drugs most commonly used in headache tablets and what are the objections to their use?

49. Give ten rules for the giving of liquid medicine.

50. What is the best method of giving powders?

51. How would you give pills to a patient who had trouble in swallowing them?

52. What special care must you take of tinctures? Why?

53. How often should the medicine cupboard be gone over? Why?

54. Name the five ways in which medicines are introduced into the body.

55. Name eight or more medicines that should be in every home.

56. What should be included in the essential equipment of a sick room?

57. Name five good disinfectants.

58. What is the normal human temperature?

Lesson 6.

59. Name five causes of a lowered temperature.

60. Name five or more causes of an increase in temperature.

61. Name three ways of taking the temperature with a clinical thermometer, and tell when each is used.

62. Define pulse.

63. How would you take the pulse of a patient who had both wrists bandaged?

64. Name three causes of quickened pulse. What is the normal pulse rate?

65. What four things do we consider when taking a patient's pulse?

66. Define intermittent pulse.

67. What is respiration? What is the normal rate of respiration?

68. How is the respiration rate usually taken?

69. Name five things the nurse should note in recording respiration.

Lesson 7.

70. Name five remedial uses of water and tell what you mean by each.

71. Describe the method of giving a cleansing bath to a patient in bed.

72. Describe the method of changing the gown of a patient in bed.

73. When should you give a cold sponge bath? How do you give it?

74. Give four cases where a hot foot bath is valuable.

75. What caution should be observed when giving hot packs or sweats?

76. For what are enemata employed?

77. When should the nurse give the patient an enema?

78. Define a douche, and tell when douches should be given by a nurse.

Lesson 8.

79. Name five or more symptoms of sickness.

80. What are the symptoms of fever?

81. What are the symptoms of hip disease?

82. Name three common causes of bad breath.

83. What is the usual cause of mouth breathing?

84. What is sputum? How should it be disposed of?

85. Tell how to prepare a sputum specimen for the doctor.

86. Tell how to prepare a urine specimen for the doctor.

87. Why should a nurse keep bedside notes? What should she include in these notes?

Lesson 9.

88. Define first aid.

89. What are the signs by which one may tell that there is an internal hemorrhage?

90. What is the treatment for internal hemorrhage?

91. Should the nurse give stimulants in case of hemorrhage? Give reasons for your answer.

92. How can one distinguish between a lung hemorrhage and a stomach hemorrhage?

93. Name five or more causes of nose hemorrhage, and tell how it should be treated.

94. Name four or more causes of convulsions in children, and tell how they should be treated.

95. What would you do in treating a patient that had fainted?

96. Name five or more causes of unconsciousness.

97. How can you distinguish between the unconsciousness of apoplexy and the unconsciousness of alcoholism?

98. What is the emergency treatment for apoplexy?

99. What is the emergency treatment for shock?

100. Distinguish between the treatment for sunstroke and for heat exhaustion.

101. How do you make a poultice?

102. When are stupes used, and how are they made?

103. What are two important cautions to be observed in the use of the hot water bottle?

Lesson 10.

104. What is the emergency treatment for wounds?

105. What is the emergency treatment for burns?

106. What is the emergency treatment for acid burns?

107. Name and define the three kinds of fracture.

108. Name five symptoms of fracture.

109. What is the treatment for fracture?

110. What are splints? What may they be made of?

111. Why should the nurse never attempt to adjust the parts in case of compound fracture?

112. Name and define the three classes of external hemorrhage.

113. What is the emergency treatment for external hemorrhage?

114. How do you make a tourniquet, and what points must you remember in applying one?

115. What are sprains?

116. What are the common symptoms of sprain?

117. What is the treatment for sprains?

118. How would you induce artificial respiration?

119. Should the nurse treat cases of dog bite? Give a reason for your answer.

120. What is the treatment for bee stings and insect bites?

121. Name and define three kinds of bandages.

Lesson 11.

122. Name two substances that the nurse is safe in giving

123. When should a nurse not give an emetic in case of poisoning?

124. What would you give for an emetic?

125. Discuss the symptoms and the treatment for carbolic acid poisoning.

126. Discuss the symptoms and the treatment for arsenic poisoning.

127. What are the usual causes of arsenic poisoning?

128. What are the symptoms and causes of mercury poisoning?

129. Name five common alkali poisons.

130. What are the symptoms and treatment for alkali poisons?

131. What is the treatment for iodine poisoning?

132. What is the treatment for phosphorus poisoning?

133. Name five common narcotic poisons.

134. What are the symptoms and treatment for narcotic poisoning?

135. What is the emergency treatment for poisoning from anesthetics?

136. Name five common acids that may cause poisoning and discuss the treatment for acid poisoning.

137. What is the treatment for mushroom poisoning, and for ptomaine poisoning?

138. What causes ptomaine poisoning?

139. What are the symptoms and treatment for ivy poison?

Lesson 12.

140. From what does the human body get energy?

141. Why does the human body need air?

142. What is carbon dioxide and how is it produced?

143. What are the duties of the kidneys?

Lesson 13.

144. What are the uses and functions of the bones in the human body?

145. What organs are contained in the abdominal cavity?

146. How is the food digested in the stomach and intestines?

147. What is chyle?

148. What is lymph?

149. Describe the course of the blood through arteries, capillaries, veins and heart.

150. What are the essential differences between arteries and veins.

Lesson 14.

151. What are vitamines and where are they found?

152. What are the five classes into which food is divided?

153. To what class of foods does each of the following belong: Meat, sugar, butter, fish, eggs, olive oil, molasses, candy, beets, milk, cheese, gluten, corn-starch, white flour, rice, dried peas, dried beans, lard, oleomargarine, nuts?

154. In what vegetables is iron plentiful?

155. Where do we find phosphorus in the body? In what foods is it abundant?

156. What are the sources of water in the system.

157. Name five uses of water in the body.

158. What is a calory?

159. How much of each of the following will you have to eat in order to produce 100 calories of heat: Milk, toast, eggs, bacon, potatoes, apples, oranges?

Lesson 15.

160. What care should be observed in feeding a helpless patient? An unconscious patient?

161. What are three ways in which the nurse may tempt the patient's appetite?

162. Which is better, to serve a little of several foods, or a quantity of one food?

163. Why is it important that the patient be kept cheerful while he is eating?

164. Name ten foods that would constitute a fluid diet.

165. What diet would you give a child that had measles? Tonsillitis? Chickenpox? Cold?

166. What is the guide to the correct diet for a typhoid patient?

167. What is the guide to the diet for diabetes?

168. What foods must a patient suffering from diabetes avoid?

169. What foods is such a patient allowed to have?

170. What is the diet for patients suffering from tuberculosis?

171. What diet would you give a patient suffering from nausea?

Lesson 16.

172. Name the three fundamentals of civilized life.

173. What four fundamentals has the present day sanitarian added to the original three fundamentals? Discuss each of these fundamental requirements.

174. What are the six classes of things that we ought to get rid of in the home? Give reasons for getting rid of each one.

175. What should one do about gas leaks?

176. Why is it better to keep soiled clothing in a willow hamper than in a closed box.

177. How can one get rid of bedbugs, roaches, fleas, rats?

178. What is the greatest danger to health from harboring rats?

179. What are the two chief things we ought to bring into the home? Give reasons why each should be brought in.

180. What are the four classes of things we ought to keep out of the house? Tell how each class can be kept out.

Lesson 17.

181. Why should we avoid defective plumbing?

182. How does Chicago dispose of sewage?

183. What are the objections to drains made of tiled pipe?

184. What is a catch basin and what is it for?

185. What four classes of vertical pipes are usually found in every house? How can you distinguish these pipes from each other?

186. What is a trap? Why is it necessary that the trap be in good order and filled with water?

187. How should porcelain sinks and other plumbing fixtures be cleaned? Why should they not be cleaned with scouring powders?

Lesson 18.

188. What are cells and how are they fastened together?

189. Name the three classes of fungi and how does each class multiply itself?

190. Name and define the two classes of bacteria.

191. Name and define the three groups of parasitic bacteria.

192. Name and define the four classes of cocci.

193. How are bacilli classified?

194. What do the staphylococci produce?

195. What causes erysipelas?

196. What precautions should a nurse take who has been nursing a case of erysipelas?

197. What causes colds?

Lesson 19.

198. Name three differences between Barber's itch and real itch.

199. What is the treatment for true itch?

200. How can one get rid of head lice? Of body lice?

201. What symptoms may indicate the presence of round worms in children? Of pin worms?

202. How can one avoid getting tapeworm? Trichina?

203. What disease does each of the following carry and how does it carry the disease: house-fly, Anophelina mosquito, Stegomyia mosquito, fleas, lice?

Lesson 20.

204. What causes colds?

205. Give three or four ways of avoiding colds.

206. What is bronchitis? How is it carried? How may it be avoided?

207. What is infantile paralysis?

208. How is infantile paralysis conveyed? How may it be avoided?

209. How is cerebrospinal meningitis carried? How may it be avoided?

210. What percentage of the deaths of Chicago are due to pneumonia.

211. What are the symptoms of pneumonia? How is it conveyed and how may it be avoided.

Lesson 21.

212. What are the symptoms of contagious sore throat? How is it conveyed and how may it be avoided?

213. What is the difference between tonsillitis and quinsy?

214. How is tonsillitis conveyed and how may it be avoided?

215. How is diphtheria conveyed and how may it be avoided?

216. What are the symptoms of scarlet fever? How is it conveyed and how may it be avoided?

217. What are the symptoms of measles? How is it conveyed and how may it be avoided?

218. What is German measles? How is it conveyed and how may it be avoided?

219. How are mumps conveyed and how may they be avoided?

220. How is whooping cough conveyed and how may it be avoided?

221. Are whooping cough and measles serious diseases? Give reasons for your answer.

222. What is chancroid? How is it conveyed and how may it be avoided?

223. What are the three stages of syphilis?

224. Name five or six ways in which syphilis may be conveyed.

225. Name three ways in which gonorrhea may be conveyed. How may it be avoided?

Lesson 22.

226. How is typhoid fever transmitted?

227. Give six rules for preventing the spread of typhoid fever.

228. How is malaria conveyed?

229. Give two rules for preventing the spread of malaria.

230. How is yellow fever conveyed? How may its spread be prevented?

231. What are the symptoms of chickenpox? How is it conveyed and how may it be avoided?

232. What are the five varieties of smallpox?

233. How is smallpox conveyed and how may it be voided?

234. What is impetigo contagiosa and how may it be avoided?

235. How is itch conveyed? What will cure it?

236. What is the cause of summer diarrhea of infants?

237. Give two rules for preventing babies from getting summer diarrhea.

238. How is dysentery conveyed and how may it be avoided?

Lesson 23.

239. What is the first rule for a nurse in a contagious disease sick room?

240. How should a nurse dress for nursing a contagious disease?

241. How does a nurse care for the thermometer used by a patient suffering from a contagious disease?

242. Name six drugs needed in the contagious disease room, in addition to the doctor's prescriptions.

243. How should the laundry be handled in the case of contagious diseases?

244. How should dishes and utensils used in a contagious disease sick room be disinfected?

245. What must be done before the contagious disease patient may be released from quarantine?

Lesson 24.

246. What are the symptoms of influenza, and what are its most common complications?

247. What precautions should the nurse take to prevent the spread of the disease?

248. Why should an inflenza patient never be exposed to cold draughts?

249. What should be the diet for an influenza patient?

250. Why is it particularly harmful for the influenza victim to take headache or cold remedies?

251. What emergency applications may be made in case an influenza patient suffers from severe pain in the chest?

252. What measures are permissible for an influenza patient's headache?

253. What complication do children often develop as a result of influenza?

254. Discuss the convalescence of an influenza patient.

255. Give six rules that the nurse should observe in order to avoid catching influenza herself.

Lesson 25.

256. Where will the tubercle bacillus grow?

257. Where do children usually have tuberculosis?

258. What are the three ways by which tuberculosis enters the body?

259. What are the most common symptoms of tuberculosis?

260. Why should all cases of tuberculosis be reported to the Health Department?

261. Give five rules for preventing the spread of tuberculosis.

262. How would you disinfect the room from which a tuberculous patient has been taken?

Lesson 26.

263. Define menstruation.

264. What are the symptoms of pregnancy?

265. How can a pregnant woman determine the time for her confinement?

266. What should be the diet of a pregnant woman?

267. Name and discuss briefly eight of the possible complications of pregnancy.

Lesson 27.

268. What is the show?

269. What are the signs of the beginning of actual labor?

270. What care should the nurse take of her patient during the different stages of labor?

271. Why must the eyes of the new-born babe be treated with silver nitrate or argyrol? Where can argyrol for this purpose be secured free?

272. Give five general hygienic rules that should be observed by every pregnant woman.

273. What treatment should be given the breasts during the last four months of pregnancy?

274. When is the baby given its first nursing? What treatment of the breasts is necessary before the baby is given its nursing? After each nursing?

275. What care must be taken of the patient during the puerperium?

Lesson 28.

276. What things are necessary to prepare the bottle for a bottle fed baby?

277. How would you test the temperature of milk for a bottle fed baby?

278. How often should a baby have a bath? How should it be given?

279. With what should the baby's eyes and nostrils be bathed daily?

280. What clothes should a baby wear on a very hot day?

281. In what order should the baby's clothes be put on?

282. How often must a baby's diapers be washed? Why?

283. What sort of bed should be used for the baby and how should it be made?

284. Does crying injure the baby? Give reasons for your answer.

285. What would you do for a baby that has colic?

286. What habits should be established in infancy?

287. What is the proper food for babies? Why?

288. When should mothers not nourish their babies?

289. How may a nursing mother decide whether it is safe for her to eat cabbage, onions, etc.

290. What should be the interval between the baby's feedings?

291. How long should a baby nurse at a time?

292. When may the baby begin to take other food than mother's milk and what other foods may he have?

Lesson 29.

293. Upon what three things does the development of the normal child depend?

294. Name a good diet for a growing child.

295. Name five foods that should not be given to the growing child.

296. Why should a child have a yard or a public playground to play in?

297. What is the most important factor in a child's training? Why?

298. What do you mean when you say that a child is undernourished?

299. Name four or five common causes of a child being under weight.

300. Which is the better for a child, five moderate meals a day or three large ones?

DIRECTORY OF HEALTH, CHARITABLE, MEDICAL AND SOCIAL AGENCIES IN CHICAGO.

HEALTH.

DEPARTMENT OF HEALTH—
710 City Hall. Tel. Main 447, for all bureaus.
Complaints received in regard to insanitary conditions, violations of health ordinances, breaking of quarantine, sale of unwholesome milk and food. Distributes free vaccine and antitoxin. Laboratory makes Widal tests for typhoid, examinations of throat cultures for diphtheria, and sputum for tuberculosis.

MUNICIPAL CONTAGIOUS DISEASE HOSPITAL—
31st St. and California Ave. Tel. Rockwell 5000.
Receives patients suffering from scarlet fever and diphtheria.

HEALTH DEPARTMENT INFANT WELFARE STATIONS—
Sta. No. 1—4253 S. State St. Tel. Boulevard 1817.
" " 2—Polk and Paulina Sts. Tel. Seeley 5060.
" " 3—1642 W. 35th St. Tel. McKinley 1686.
" " 4—3132 S. La Salle St. Tel. Drover 4094.
Give guidance to mothers in the care and feeding of their babies.

HEALTH DEPARTMENT VENEREAL DISEASE CLINICS—
Sedgwick Sta.—1367 N. Sedgwick St.
Racine Ave. Sta.—1215 S. Racine Ave.
South Side Sta.—2950 Calumet Ave.
Stock Yards Sta.—734 W. 47th St.
Grand Crossing Sta.—1000 E. 75th St.
Iroquois Memorial Hospital—23 N. Market St.
For the free treatment of venereal diseases.

CHICAGO TRAINING SCHOOL FOR HOME AND PUBLIC HEALTH NURSING—
Ada and Fulton Sts. Tel. Haymarket 8199.
Gives courses in home and public health nursing. Keeps a register of persons available as home nurses.

MUNICIPAL TUBERCULOSIS SANITARIUM (General Office)—
105 W. Monroe St. Tel. Central 8644.
General supervision and control of tuberculosis in the city of Chicago.

MUNICIPAL TUBERCULOSIS SANITARIUM—
Crawford and Bryn Mawr Aves. Tel. Monticello 3500.
Free institutional care of persons having tuberculosis in the early stages.

MUNICIPAL TUBERCULOSIS SANITARIUM DISPENSARIES—
Sedgwick St.—1367 Sedgwick St. Tel. Superior 9081.
Ashland Ave.—10 S. Ashland Ave. Tel. Seeley 858.
Racine Ave.—1215 S. Racine Ave. Tel. Canal 1538.
Stock Yards—738 W. 47th St. Drover 5480.

MUNICIPAL TUBERCULOSIS SANITARIUM DISPENSARIES—Cont'd.
Grand Crossing—1000 E. 75th St. Tel. Blackstone 1633.
Northwest—1360 N. Ashland Ave. Tel. Armitage 2955.
Wabash Ave.—4746 Wabash Ave. Tel. Kenwood 8771.
South Side—2950 Calumet Ave. Tel. Douglas 7596.
For the diagnosis, treatment and supervision of cases of tuberculosis. Also take applications and make examinations of persons to be admitted to the Municipal Tuberculosis Sanitarium.

INFANT WELFARE SOCIETY (General Office)—
104 S. Michigan Ave. Tel. Randolph 3146.
General supervision of the infant welfare stations operated by this organization.

STATIONS:
Allport Sta.—1718 S. Racine Ave. Tel. Canal 4112.
Ashland Sta.—1701 Washburne Ave. Tel. Canal 82.
Burlington Sta.—20th and May Sts. Tel. Monroe 5840.
Henry Booth Sta.—701 W. 14th Pl.
Mary Crane Sta.—820 Gilpin Pl. Tel. Monroe 6231.
Southwest—1657 W. 20th St. Tel. Canal 4018.
Trumbull Sta.—2337 S. Trumbull Ave. Tel. Rockwell 910.
Armitage Sta.—1952 W. Armitage Ave. Tel. Armitage 4414.
Chicago Commons—955 Grand Ave. Tel. Monroe 1030.
Erie Sta.—1753 W. Erie St. Tel. Monroe 6682.
New Trier Sta.—Chicago Ave. and Noble St. Tel. Monroe 5840.
North Ave.—1714 W. North Ave. Tel. Monroe 4885.
Northwestern—1400 W. Augusta St. Tel. Monroe 1717.
St. Elizabeth—1458 Blackhawk St. Tel. Monroe 5691.
Bishop Sta.—4751 S. Loomis St. Tel. Drover 2074.
Forty-third St. Sta.—554 W. 43rd St. Tel. Boul. 2155.
Cornell Square—51st and Wood Sts. Tel. Prospect 5350.
Davis Square—44th and Marshfield Ave. Tel. Yards 127.
Jackson Park Board—83rd and Bond Ave. So. Chi. 1740.
Palmer Park—111th St. and South Park Ave.
Providence—3052 Gratton Ave. Tel. Yards 4663.
Milton Ave. Sta.—876 Townsend St. Tel. Superior 6833.
Seward Park-Elm and Sedgwick Sts. Tel. Superior 5430.
Give guidance to mothers in the care and feeding of babies.

CHARITABLE.

COUNTY AGENT (Main Office)—
213 Peoria St. Tel. Monroe 2608.
Gives medical and material aid to the worthy poor.

UNITED CHARITIES OF CHICAGO—
168 N. Michigan Ave. Tel. Majestic 7160.
Gives relief and aid to the worthy poor.

ASSOCIATED CATHOLIC CHARITIES—
7 W. Madison St. Tel. Majestic 7191.
Give relief and aid to the worthy poor.

ASSOCIATED JEWISH CHARITIES OF CHICAGO—
1800 Selden St. Tel. West 4980.
Give relief and aid to the worthy poor.

VISITING NURSE ASSOCIATION—
104 S. Michigan Ave. Tel. Central 1142.
Maintains a staff of visiting nurses for those unable to secure skilled nursing care at home.

POOR HANDMAIDS OF JESUS CHRIST—
1644 Hudson Ave. Tel. Diversey 3294.
Give nursing care to the poor in their homes.

CHICAGO HOME FOR THE FRIENDLESS.
5059 Vincennes Ave. Tel. Oakland 939.
Provides temporary care for destitute women and children.

CHICAGO FOUNDLINGS' HOME—
15 S. Wood St. Tel. West 1398.
Institutional care of foundlings and destitute children and dependent mothers with infants.

ST. VINCENT'S INFANT ASYLUM—
721 N. La Salle Ave. Tel. Superior 282.
Institutional care of foundlings and destitute children under four years of age and dependent mothers with infants.

MEDICAL AID.

COOK COUNTY HOSPITAL—
Harrison and Wood Sts. Tel. West 4960.
General charity hospital.

ILLINOIS CHARITABLE EYE AND EAR INFIRMARY—
904 W. Adams St. Tel. Monroe 1109.
Gives free treatment for diseases of the eye, ear, nose and throat.

HOME FOR DESTITUTE CRIPPLED CHILDREN—
1653 Park Ave. Tel. West 232.
For the care and treatment of children suffering from orthopedic diseases.

CHICAGO LYING-IN HOSPITAL AND DISPENSARY—
426 E. 51st St. Tel. Kenwood 7820.
Gives pre-natal instruction to maternity cases and cares for women during confinement in their homes and at the hospital.

MEDICAL AID (Continued)

CHICAGO HOME FOR INCURABLES—
5535 Ellis Ave. Tel. Hyde Park 74.
For the care of the incurable.

FREE MEDICAL DISPENSARIES (in connection with medical colleges):
Central Free Dispensary of Chicago—1744 W. Harrison St.
Tel. West. 1400.
South Side Dispensary—2431 S. Dearborn St.
Tel. Calumet 409.
Lincoln Dispensary—706 S. Lincoln St. Tel. West 155.
Hahnemann Dispensary—2811 Cottage Grove Ave.
Tel. Calumet 42.
West Side Free Dispensary—508 Honore St. West 4160.
Give free medical and surgical treatment.

SOCIAL AGENCIES.

BOARD OF EDUCATION (Bureau of Compulsory Education)—
607 Plymouth Court. Central 3980.
Makes investigation of children's absence from school.

BUREAU OF SOCIAL SERVICE OF COOK COUNTY—
1130 County Building. Tel. Franklin 3000.
Does social service work in Cook County outside of Chicago and in connection with the county institutions.

JUVENILE PROTECTIVE ASSOCIATION—
816 S. Halsted St. Tel. Monroe 5796.
Works to prevent conditions contributing to the dependency and delinquency of children.

ILLINOIS HUMANE SOCIETY—
1145 S. Wabash Ave. Tel. Harrison 8185.
For the prevention of cruelty to children and animals.

ELIZABETH McCORMICK MEMORIAL FUND.
6 N. Michigan Ave. Tel. Randolph 7250.
To improve the conditions of child life.

INDEX